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CALIFORNIA

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December, 1921 issue, published.....December 1st, 1921

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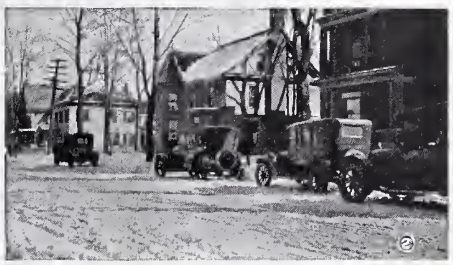

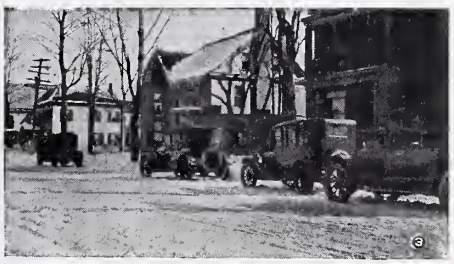

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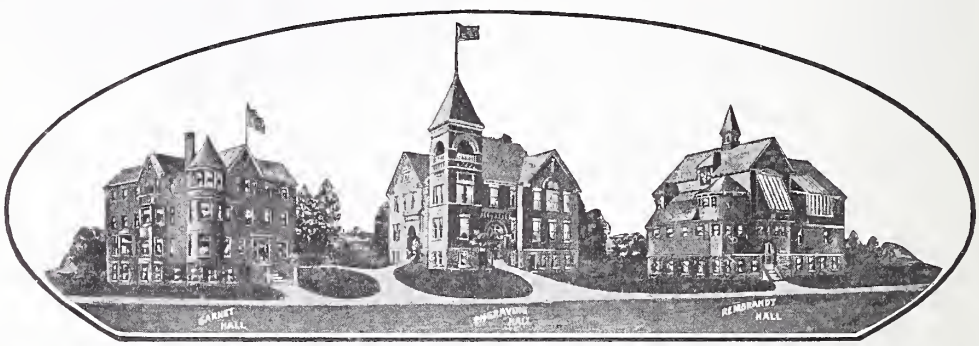

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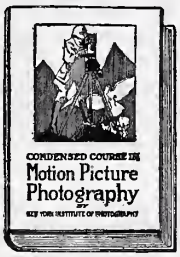

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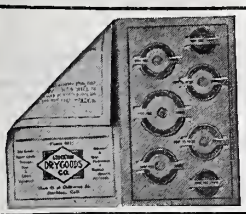

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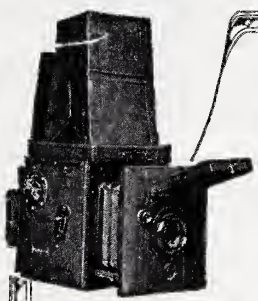

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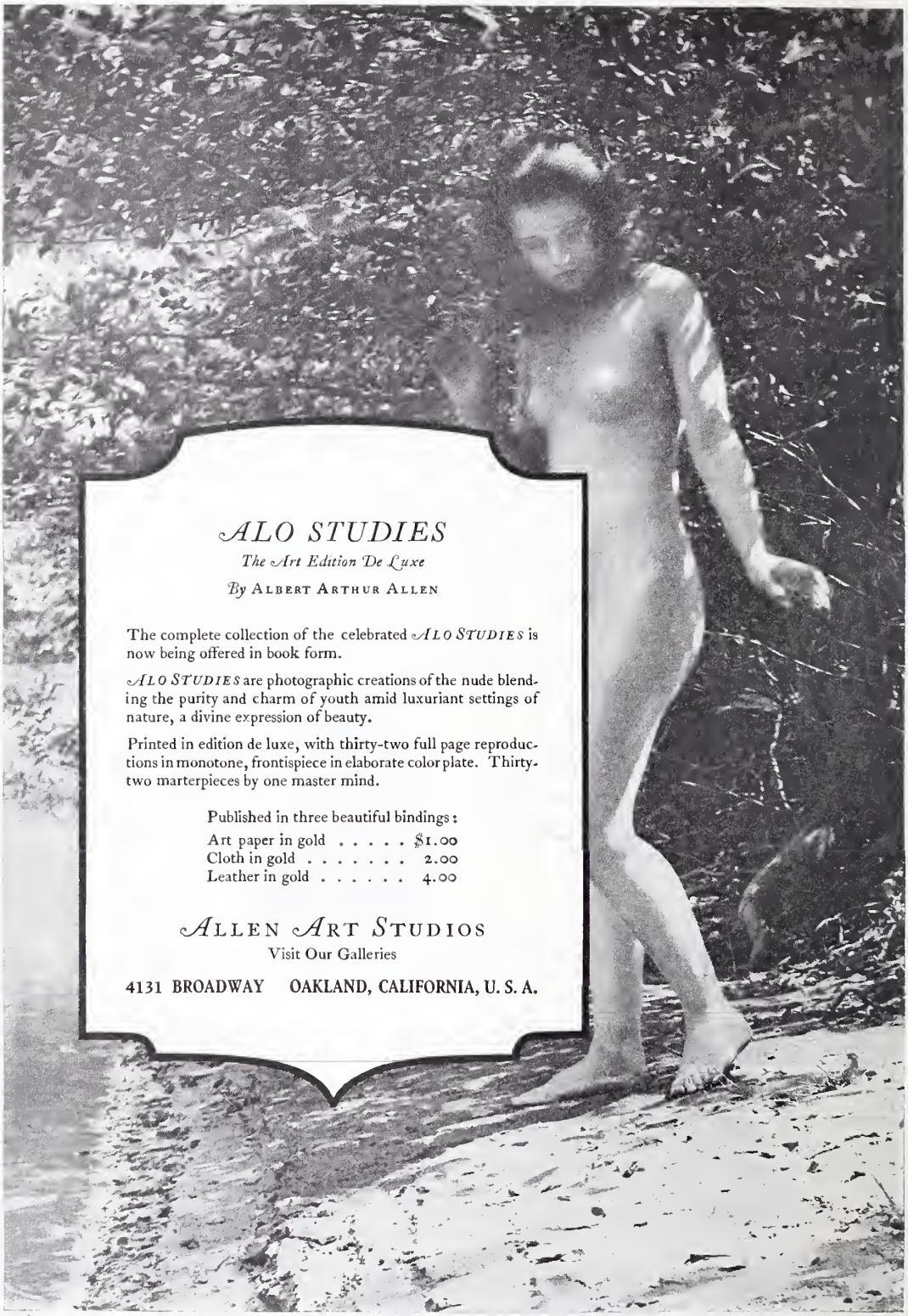
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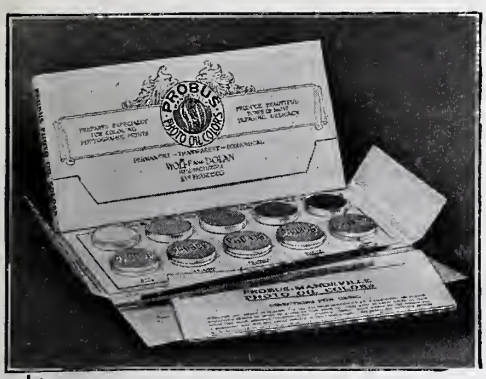

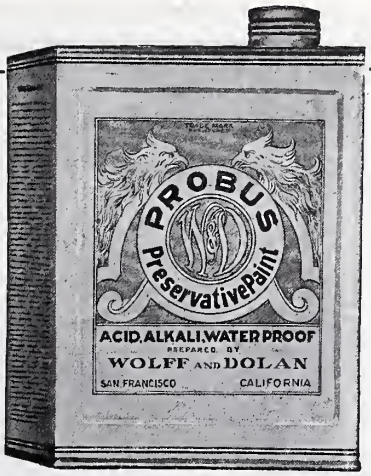

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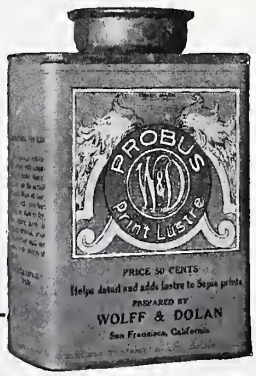

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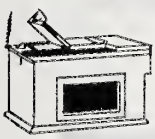

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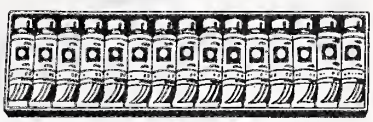

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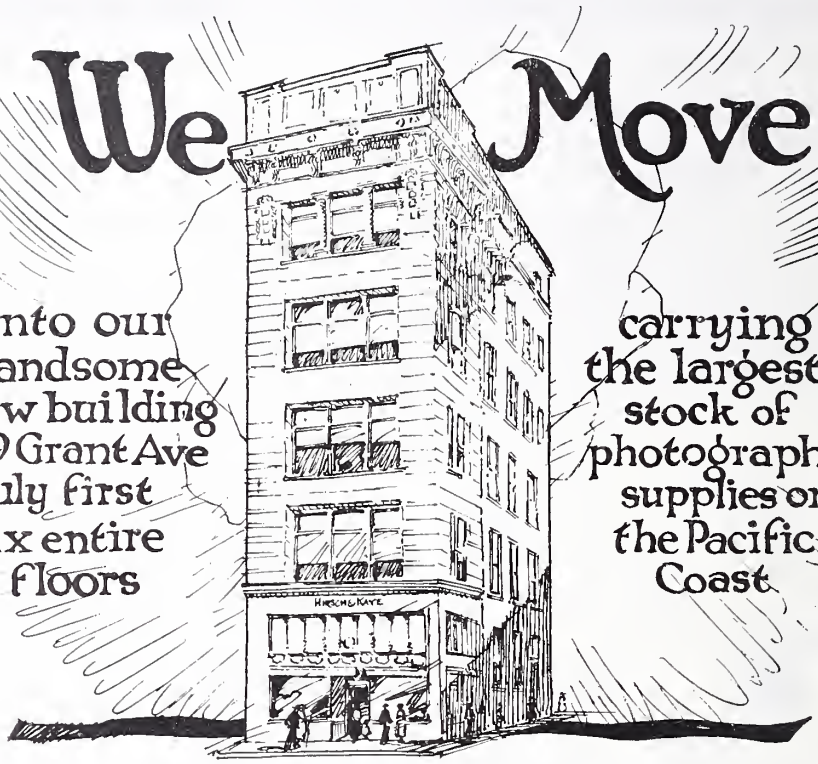

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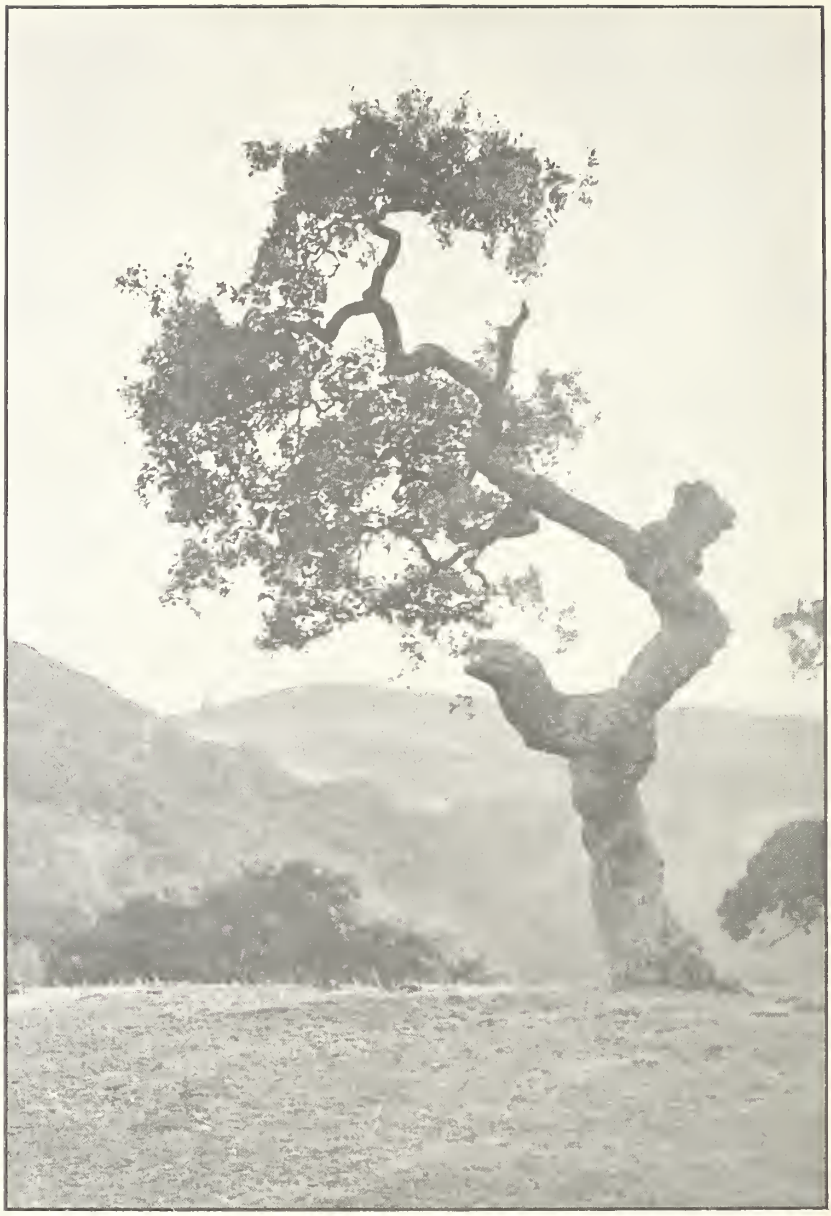

"THE TWISTED OAK THAT GUARDS A HILL"
By W. ZENIS NEWTON

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

H. D'ARCY POWER, M. D.
Editor-in-Chief

EDGAR FELLOES,
Associate Editor

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Speed Photography

By Frank Reeves

With Illustrations by the Author

When the desire to own a camera and make pictures first began to assert itself I did not stop to figure out any particular branch of photography—I just knew that it looked interesting, the camera people said it was easy, and that it must be very nice to be able to make just any picture that you wanted. The desire continued to grow; I wrote for more catalogues and studied them carefully—I was then living in the country well away from any town that carried anything photographic, so by necessity I was forced to select my outfit unaided from catalogues. The cost and inconvenience of transportation, for it was before the days of parcel post, made me go slow in my purchases, and I really came out pretty well on my selection.

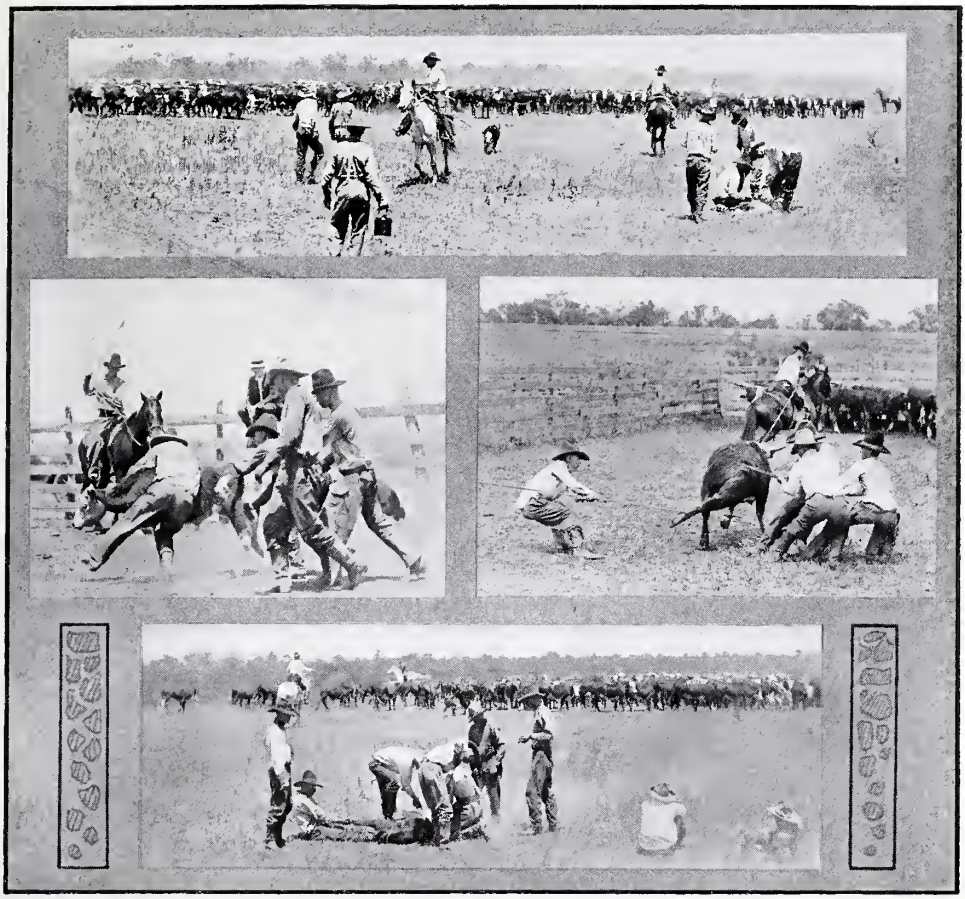
The camera arrived and I was ready to satisfy my desire—to make pictures of everything. The farm buildings, the stock, and even the family, either willingly or unwillingly, were "shot." If a few friends dropped in I soon appeared with my camera, and at their next call they were either delighted or surprised to see themselves as others see them as depicted by my photographic skill, unless I had been so thoughtless as to fail to withdraw the plate holder slide, or some little simple something like that which has a tendency to lower one's percentage of "hits." Failure to withdraw the slide naturally resulted in my trying to develop an unexposed plate, but the law of average is a great factor in everything, and to compensate for this I often found that I had two exposures on one plate.

Finally I became convinced that I couldn't photograph everything, and that it was more or less of an expensive undertaking.

This I think is the most critical time in an amateur photographer's career—he either gives it up entirely with perhaps an occasional exposure turned over to some one else to finish, or he begins to really try to make some pictures, perhaps selecting a certain class of subjects that appeal to him. I soon found myself working on different subjects as the mood struck me, and while I continue to cover a pretty wide field in my attempt throughout the year, yet I find my greatest pleasure in a few special subjects or classes—one of which is action pictures that tell a story.

PLAY TIME

Shortly after my camera came I decided I wanted to make some speed pictures. In view of the fact that the box in which the plates were packed had plainly marked on it, "Extra Fast," I thought I was at least pretty well equipped for the work. I find that to a beginner, and to a lot who have been making pictures quite awhile, that it is difficult for them to realize that their shutter that opens and closes so quickly that they can only see it flicker will not stop considerable action. I made several efforts, but failed to get the desired results, and was finally convinced that I needed a different camera. I wrote for more catalogues and learned that I should have a Graflex. But when I read the price of the outfit it actually put my speed photographic germ in a dormant state. This happened several photographic seasons until finally it refused to sleep any longer and I found myself in possession of a Graflex. Now for the speed pictures, I would show the world a real set of action pictures. You know "Lady Luck" seems to judge just when to come around to keep you everlastingly playing the game. If she hadn't flirted with me at the start—that is, after I learned enough to know you



BRANDING TIME, SCENES ON THE S. M. S. RANCH

can't make speed pictures with just any kind of an outfit and got the Graflex, the chances are I would have been easily discouraged, and soon let up. "Lady Luck" was in an indulgent mood when I first started out with my Graflex. The first exposure was of a bucking broncho and it was very good. My plans ran high, but it took several hundred exposures before I got a better one.

I soon found that I could stop the action alright, but the results were not at all pleasing in a good per cent of the cases. I have found this to be so in all speed pictures, and to a very pronounced degree in pictures of bucking horses. As a matter of fact, I have made some pictures of the latter subject that seemed almost unthinkable they should actually depict some part of the actual performance. The mind carries the position of the horse at the beginning of the jump, his maximum height, and the landing—a complete jump. The camera shows him in one position only, and a foot in an awkward position, or something else equally small will throw the whole picture out of balance and make it look unreal. So after convincing

myself that with proper light conditions the Graflex would stop the action, it was up to me to make the exposure at the proper time, and therein is the secret of success in speed pictures.

Speed pictures, as a rule, are made under trying conditions. Often the light makes it impossible to work from the most advantageous view point. Or if a number of people are about they want to crowd about you, and seem to have no compunction about bumping against you, or stepping in front of the camera just as you make the exposure. The subject is often of a character that necessitates your moving quite a bit, either to keep it on the plate or to get out of the way, and often it is a great temptation to disregard the "Safety First" slogan and stay just a second longer. If you want to be busy—so busy you haven't time to think of anything else, just attempt to photograph a real lively subject that has no respect for your choice of location or the proper lighting, and if you succeed in keeping it on the plate properly focused I don't believe you will have time to speculate much as to when photo supplies are going back to the old prices. Pictures of divers, or any subject that you know will take a certain course, gives you a better chance, but even then you have no easy job. It is quite an aid to know about what angle the subject will move across the view in addition to the probable distance. They are both valuable in making an estimate as to the proper exposure to stop motion. I never try to see just how short an exposure I can make, but rather just how long an exposure I can make and at the same time stop action—at least objectionable action. That enables me to stop the lens down. In fact, in my work on a great many subjects I often take a chance on having a foot or something of the kind show the slightest movement, and have a wider field in focus than to work with the lens wide open and have microscopic sharpness of the main subject. I have often been surprised how long an exposure can be given just at the right time and still not show objectionable motion, even when the picture has been enlarged. Of course, the subject itself and the surroundings will be the real determining factor as to whether depth of focus is preferable to microscopic sharpness of the subject.

You will note that I mention above that the angle the subject will probably move across the field and the distance the subject is from the camera will affect the speed necessary to stop motion. Perhaps all of you know this, but it is possible that some of you have never figured out just the effect it will have. If an object moving across the plate at a given speed requires 1/300 of a second to stop all motion; this same object at the same rate of speed, but coming at an angle of 45 degrees, will require only 1/200 of a second to stop motion, or if it is coming directly toward the camera, or going away from it, an exposure of only 1/100 will stop motion.

The distance from the camera affects it this way: If an object moving at a certain speed 25 feet from the camera requires an exposure of 1/400 of a second to stop motion, then at 50 feet an exposure of approximately 1/200 of a second will stop the same motion, or at 100 feet approximately

WITH A GRAFLEX ON THE S. M. S. RANCH

1/100 of a second to stop the motion. Whether you are interested in speed photography at all or not, the above often comes in handy in a number of views.

Now, a word as to material used. There is no question in my mind but what plates are superior to films for speed work—in fact, I prefer plates even where the action would permit the use of films, but that does not mean that you have to use plates to get good results. You may be able to get better results from films that from plates. There are any number of good plates made, but my advice to anyone is to adapt one plate for certain work and then stick to it and thoroughly master it. Not long ago I was talking to a photographer who has a wonderful collection of speed pictures and he assured me that I ought to use a particular plate. Not long after that I was talking to another photographer who has made speed pictures all over the U. S. and he declared that particular plate a failure, and recommended another. My work has been done almost exclusively with Seed's 30 or Standard Polychrome. At the moment I don't think I could express a preference between the two. In the developer I handle them alike.

If you have never used a tank give it a good honest trial and be convinced. With a known error in exposure before you start development you may be able to get better results with tray development, but how many of these kind of exposures do you have during the year. I believe if you put the plate into the developer and let that determine your error in exposure, then the chances are, it has gone too far to be corrected in most cases—at least with the average photographer, and that better and more uniform results will be obtained from the tank.

In photography there are very few hard and fast rules. Of course, there are a few you can't transgress and hope to succeed, but just because some one tells you that a certain thing can't be done is not absolute proof that it can't. It may be that he will know more about photography than you will ever know, but I have found that it pays to take a chance some times. A few of my best pictures are chance pictures. This reminds me of a few little lines I read not long ago that ran something like this:

Some one said that it couldn't be done,
But he with a chuckle replied;
That maybe it couldn't, but he would be one,
That wouldn't say so till he had tried.

If these few random remarks prove interesting or helpful to anyone I am thankful for my effort; if not, don't blame me for it, but blame Camera Craft for having published it.

SPRINGTIME

CONTROLLING THE NEGATIVE

Negatives, and that includes most negatives made by snapshots, often have the shadows underexposed. A simple way to control this defect is to apply some transparent orange or other nonactinc color to these over thin parts with a small brush; the color should be diluted with water to the proper strength, as occasion demands.

Another way, more suitable for the novice perhaps, is to bind the film along one edge to the smooth side of a piece of ground glass and with a lead pencil add a protecting coat of lead over the offending shadow portions of our negative. This may be overdone, of course, but then we can remove the lead with a damp rag or we may lighten it with a soft rubber.

If we make a proof on some proving paper—say Solio, we can easily determine the result and act accordingly. The same piece of glass will serve for other pictures.

Desensitising Plates and Films

By Albert Johannsen, Ph. D.

Professor of Petrology, University of Chicago

No longer need we be "Knights of the Red Lights," and strain our eyes in the dim light of the dark room. Thanks to Lűppo-Cramer we can develop our plates—ordinary, orthochromatic, or even panchromatic—in the bright yellow light that we use for developing paper. While the phenosafranine process was discovered several years ago by Dr. Lűppo-Cramer, it is only beginning to be spoken of, here and there, in this country, although in Germany it is a vital subject for discussion in most of the numerous Camera Clubs, due to the recent appearance of Dr. Lűppo-Cramer's book.

One of the merits of this process is its simplicity, whereby it differs from the foggy potassium-iodide method of unfortunate memory. Since so many widely heralded experiments fail to come up to one's expectations, one is skeptical on reading the results obtained by others with newly discovered processes, but here even the first trial is an astonishing and unexpected success. It is true that the dark room is not entirely done away with, but any dark closet will serve for the preliminary bath, and final development may be done, it is said, at one and one-half to 2 meters from a sixteen c. p. incandescent light for ordinary plates, or the same distance from a candle for panchromatic. Having a dark room, I work in a bright yellow light, such as is safe for Velox, for there is no advantage in working in a dim white light when one can as easily use an abundance of yellow.

Dr. Lűppo-Cramer found that an exposed plate, placed in a bath of safranine, had its sensitiveness reduced from 200 to 300 times. Phenosafranine was found to be the best dye, although tolusafranine or diaethylsafranine may be used. Recently an English firm placed an aqueous solution on the market, three ounces for two shillings. It has been stated that the pure dye is not an article of commerce, but I have found that it may be obtained from any biological supply house, phenosafranine (pure safranine) being used as a stain for bacilli. The dye may be added to the developer and the plates developed for one minute in the dark before the light is turned on, or it may be used as a separate bath. The writer prefers the latter method, since the plate may then be placed in any ordinary developer and the moment of first appearance of the image accurately determined.

The process is as follows: Dissolve one gram of pheno safranine in 2000 cc. of water. Personally I dissolve one gram in 100 cc. of water for a stock solution, and of this take 10 cc. to 190 cc. of water. The dilute solu-

tion is a bluish red and apparently keeps indefinitely. It may be used over and over again, and since the present price of 10 gm. of phenosafranine is only 75 cents (as against 38 cents in 1914), and this will make 20,000 cc. or over 21 quarts of dye solution, one need not hesitate about using it from the standpoint of expense.

Place the exposed plate in this solution in the dark or by ordinary ruby light. After the coloring matter has penetrated the film, which will require about a minute, the yellow light is turned on and the plate placed in the developer. The negative may be held in front of the light and examined by transmitted light, if desired, without producing fog, although if one uses the factorial system, for which the bright light is a great help, this is unnecessary. I have not yet tried how far I can safely misuse the process, but a film, see-sawed for twenty minutes through developer which was old, two feet from the bright yellow light, showed no trace of fog, and a lantern slide developed five feet below a 150 watt open light, was perfectly clear. Just because the plate is practically insensitive to light, one need not try to see if it is possible to produce fog. Longer immersion in the dye does no harm, but it is unnecessary for ordinary plates.

After development, the plate is rinsed and placed in an acid hypo bath in the usual manner. Phenosafranine stains the plate a light red, but this color usually disappears after thorough fixing in acid hypo and thorough washing. From certain doubly coated plates the color does not readily disappear. In such cases it is only necessary to place the plate, after fixing and washing for perhaps 20 minutes, in one or two changes of a few minutes each of water 100 parts, alum 2 parts, and concentrated hydrochloric acid 5 parts. Wash again for 15 minutes and dry. A clearing bath, more rapid than the above consists of:

Water	100 cc.
Sodium nitrate	0.5 gm.
Hydrochloric acid	5 cc.

Immerse until the color changes to blue, then wash.

Usually, however, the clearing bath is unnecessary. For panchromatic plates it may be necessary to leave the plates in the dye somewhat longer or to use a more concentrated solution.

Although phenosafranine is a red dye, it is not this color which protects the sensitive film from the light. Examined by the spectroscope, a plate dyed for one minute transmits all the spectrum except a small portion of the blue-green.

One peculiarity of phenosafranine is that it acts as an accelerator for hydrochinone, especially if a small amount of potassium bromide is added, and thus makes this one of the rapid instead of one of the slow developers.

Finally, if one does not wish to be thought a chorus man (or girl) in mourning in Mecca, he should use a rubber finger tip or a plate lifter.

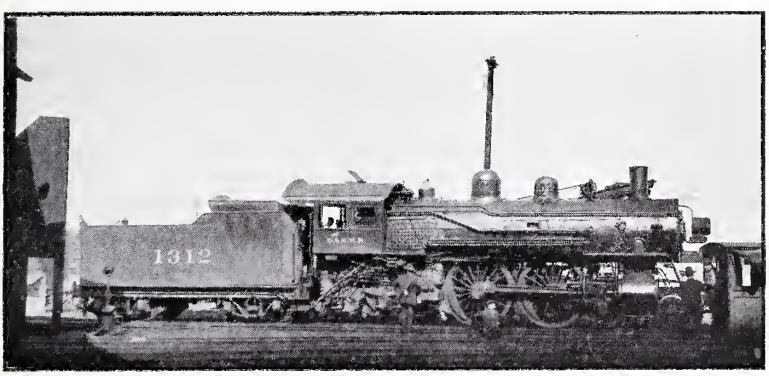
Fascination of Locomotive Photography

By R. W. Carlson

With Illustrations by the Author

To photographers, amateur photographers, who already have a start, or to those who are just making a beginning of photography, and are wondering where their hobby will lead them to, whether they should specialize or whether they should not, I would say specialize!

And if at all mechanically inclined, or interested in that nation-wide industry that covers our continent with its network of lines, not telegraph or telephone wires, but steel rails, then I would recommend to him that animate inanimate machine known as the locomotive, as the most fascinating specialization for our photographer to take up. With the locomotive naturally comes the train, be it passenger or freight, and the locomotive and train can be handled together, or with the locomotive separate. Let us discuss the locomotive.



EACH LOCOMOTIVE HAS ITS HISTORY

And now follows, how much work will it involve? That is, of course, as a whole, a question for the individual to settle. His subject is certainly not far away. And it is numerous, so numerous that there are some 70,000 in this U. S. A. And they are all different. But to most amateurs, one locomotive looks just about like every other locomotive on a particular road. This is where the fascination comes in. A few efforts in the direction of a photograph of a locomotive will soon begin to show results in bringing order out of an apparent chaos. He will find that when he has taken a photograph of a locomotive and takes a photograph of the next one, and the next one, that upon comparison the chances are they will all be entirely different.

Now then, how different are they? And when he thinks he has found the difference, has he found all the differences? And if two of them happen to be exactly the same engine, even to the number, then the process of elimination commences, so as not to repeat. After a short while this elimination process will be almost a second nature. And if he has found two of them to be the same engine, even to the number it bears, then he

THEY ALL HAVE A DIFFERENCE

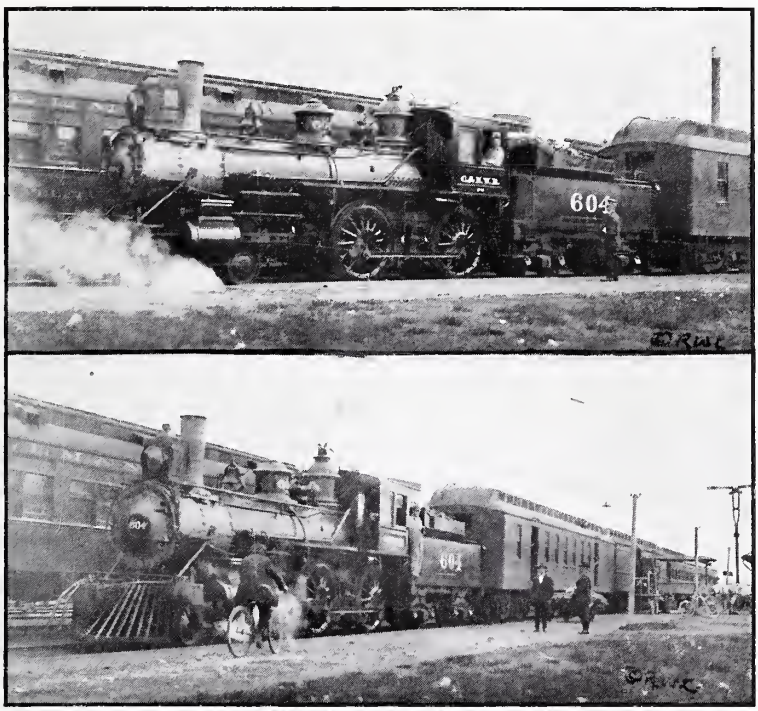
will have a first clue as to how this particular locomotive travels, what train it travels "on." Here then he can commence his train pictures if necessary, or desired. He will learn that a train is not always known by the locomotive that pulls it, or the locomotive by the train that it is "on."

And if two of his photographs are about alike except as to the locomotive number, are they exactly alike? Then there is again a process of elimination. And he will be surprised to find that when he has apparently found all the differences, he will have overlooked something worth while. The particular road's locomotive classification designation on the individual subject will help, but the amateur will soon be surprised to find that the classification is not absolute. In other words, two locomotives having the same class letter and figure painted on the cab-side, may have differences in their construction. The photographer's education along this line can never be complete, so the amateur need not be afraid that in a short time he will have to quit because of lack of material.

And do not despise the lowly-looking, apparently ready-to-be-discarded locomotive. They also will show differences in construction. Furthermore, they probably have a history attached to them. And there are certain of them that are representatives of a type that is fast passing into history, probably never to be replaced, because they are no longer built.

And as the years go by, he may find that the locomotive he took a picture of some five or so years ago and which had apparently disappeared from his particular territory, has shown up again. And he may find that there is something different about it, some change made to it. Or he may see it just once, and then it is gone, apparently for good.

Most locomotive enthusiasts know how to take a good locomotive photograph, aside, now, from knowing how to use the camera. However, there are some who do not, and there are some amateurs who do not. With a still-subject photograph, detail of course is desired. The right hand side of the locomotive is the proper side to photograph, if it can be done just as handily. But if you must get a picture, the left hand side will do just as



A TYPE OF LOCOMOTIVE RAPIDLY DISAPPEARING. (Copyrighted)

well, because if you pass it up, the opportunity to take any kind of a picture of the particular subject may go forever. The only thing about the right hand side is that it will give you more appurtenances upon which to base your differences. With a still subject, a photograph taken broadside or a little to the front of center is the best, or it may be at a 45-degree angle toward the front. Experience will teach. And if the subject is moving, much depends on your camera, on its speed, and the speed of the subject, and the direction of movement. All amateurs will soon learn that it is very hard to stop any fast moving object across the field of vision. It is then up to him to find the best place under the circumstances, to get the proper angle and as much of the detail as he thinks he wants. We shall not go into further detail on this.

After some ten years of effort in amateur photography the author finds that his interest has not waned one iota, but that it is increasing because of what he has learned, and even with the full knowledge that the field can never be completely covered, not even in his own immediate territory.

We could fill every page of this magazine with photographic examples showing technical differences in the subjects but the editor wouldn't "stand" for it. Suffice that three examples are given, with the necessary explanations. The fascination about the three of them is given with the explanation.

In closing, just let us add that the historical importance of the locomotive photograph has hardly been mentioned, for the historical significance of such a photograph is self-evident, or at least it ought to be.

The fascination as concerning the 393 and the 1312 is that they are exactly the same class of locomotive and exactly the same type, and yet they are entirely different in detail. And what kind of locomotives take up the number spaces between numbers 393 and 1312? Furthermore, this photograph of the 393, taken some four or five years ago, has become historical, for it is not an exact picture of the locomotive as it appears today, inasmuch as changes have recently been made to it, as to make it appear to be a different locomotive. And the 1312 as here presented is not exactly the way this engine looked when it came out of the builder's shop, for changes have been made to this one as well. And what will they look like ten years from now? A discussion of these technical details cannot be gone into here. We have but one road represented here; when we begin to cover other roads we find other things.

In the case of the 604, we have a locomotive of the wooden coach days applied to a steel train. This was an emergency case, the locomotive traveling only a small part of the regular locomotive district; the train is bound for Chicago. To be exact, it only pulled the train for twenty-two out of a locomotive district of 116 miles, and a total run for the train of 395 miles. The historical significance of the opportunity to take this photograph was taken advantage of when the picture was taken in 1919, because it was one of the very few, if not the only one, trips of this kind made under such conditions and with such a train. We did not foresee however, or at least could not foretell with any certainty, that it would be her last trip under such circumstances, for such it proved to be, the locomotive having been dismantled and scrapped in March, 1921, after a career of some thirty-six years of useful service. This type of locomotive is rapidly disappearing.

Portraiture at Home

By Edgar Felloes

Illustrations by F. Morris Steadman and the Author

Portraiture to many is the most fascinating branch of photography. It is undoubtedly the most difficult, but it is so natural for those who possess a camera to desire portraits of the home folks, that an article on this subject may prove of interest to a large number of our readers.

GIRL IN BLACK. By the Author

Anyone taking up portraiture for the first time should confine the work to out of doors; if they have the use of a garden so much the better, but excellent portraits may be made on the door step or near the porch.

In these days of the universal use of hand cameras it is the exception to find them fitted with a ground glass, but I should recommend those who are especially interested in this class of work to supply themselves with a ground glass attachment, as there is no doubt we can secure a higher average of success by this means. It is the only sure way to know if we are focusing properly.

This question of focusing is not fully appreciated by even the more advanced amateur and it is too much to expect the novice to be familiar with it. The popular idea of focusing is to get the image sharp on the picture plane, be it the coated glass or sensitive film. This kind of focusing is admirable for work of a scientific nature, but we expect more from the portrait than that.

In the portrait made out of doors our principal difficulty will be to control the light, and it is much better to time our work for the morning or evening when the light comes from one direction; but one can do excellent work in the shade at mid-day with a simple contrivance, the head screen.

To make a head screen, construct a light wooden frame of lath, about four feet square and cover it with white sheeting; in the center of this, cut a hole on three sides of a twelve-inch square: thus we have a flap twelve inches deep and twelve inches wide which is hinged as it were on its uncut side. This flap of sheeting is pinned back according to the size of hole needed.

It will be convenient to have an assistant hold up the screen between the source of light and the subject, about three feet away from it. The screen will have the effect of softening the light on the features and the opening in its center will allow sufficient unscreened light to pass, which will pick out the highlights and give character to the face. Just how much light should pass, is governed by the size of the hole, which is controlled by the flap referred to, and here experiment and experience will count.

If the subject is posed, let us say on the shady side of the house, and the screen is held up between the light of the sky and the head of your subject, portraits may be secured which are very pleasing, and the little contrivance is easy to make and is worth time and cost if we wish to do good work.

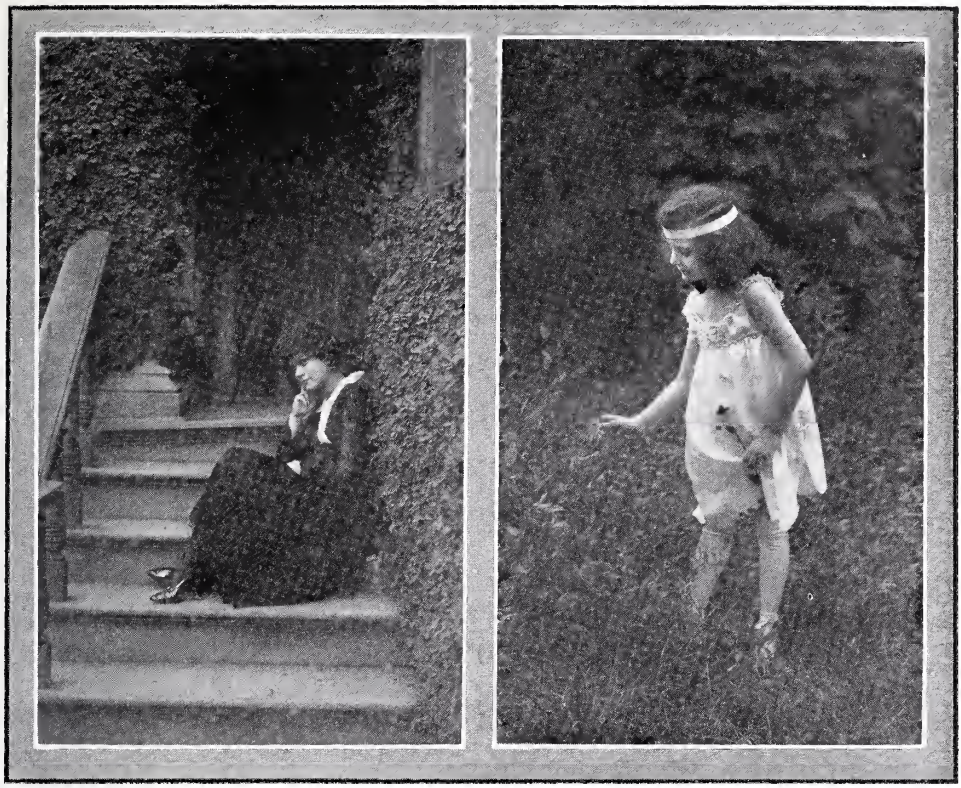
Now the tripod: you should have one, or have some means of supporting your camera.

Good results from snapshots are scarce, the light necessary for a full timed exposure is generally too trying for portraiture, unless the lens is of such a speed that the work can be carried out in the shade; but I have in mind ordinary lenses as supplied to the average hand camera, say an anastigmat of F:6.3 or a rectilinear of F:8. This latter will do excellent work too, and don't despise it because it is only a rectilinear.

The portrait of the Girl in Black was made with a rectilinear lens in a room. I had some success with that portrait, among other places it was exhibited in London and I received real money for it when published.

The one thing that frequently mars outdoor portraits is spottyness, especially in the background. Pictures taken in the sun with a leafy background are rarely satisfactory, the leaves catch the sunlight and we have a distressing number of white spots to challenge the face; we lose relief and repose. The background is an exceedingly important part of the picture; a poor background will destroy an otherwise good picture entirely, and yet I have received pictures with this important point quite overlooked.

I am fortunate in having two outdoor portraits of real merit to illustrate this point; they were made by F. Morris Steadman and will serve as excellent examples for study. The reader will notice both backgrounds are entirely different in treatment. The illustration of the child in white frock shows the ideal treatment of a natural background. Some readers would



EXAMPLES OF OUT OF DOOR WORK By F. Morris Steadman

hardly believe this picture could be spoiled by placing the child nearer to the foliage, yet such is the fact. If this child had been placed about two feet further into the picture the leaves in the background would have shown up sharply, but the photographer brought the girl forward sufficiently, so that when she was in focus the background "was off," and sufficiently soft to make a beautiful support of broken tones, and, with it all, one is not in doubt as to what that background consisted of. Outdoor portraits of this order are much rarer than one would think. It is only necessary to notice the work around us to be convinced of this fact.

Another point I wish the reader to notice is, the light comes from one direction and is cleverly handled on the child's face, and this also is unusual in portraits from the open. Notice the child's frock, it is white and delicate in detail, too strong a developer would surely have ruined that dress and over development also, but the photographer was skilful enough to get detail in his lights and in his dark background and foreground. As I remarked, the picture is worth more than a passing glance.

Let us now devote a little attention to the young lady seated on the house steps. Here we have another proposition and it is just as skilfully though differently handled.

As the portrait was desired on the steps, it was not practical to have the ivy on the walls out of focus, therefore, the photographer selected a soft light for his work, as the ivy leaves had to show as sharply as the figure, the only way to treat them was in the mass, broadly; a harsh lighting would have quite defeated this end.

The resultant picture the photographer gave us was a charming portrait in black and gray. We should not fail to appreciate the great value of that white collar, besides arresting attention, it gives tone value to the face itself, and again, notice the catch light on the face, showing the light from one direction.

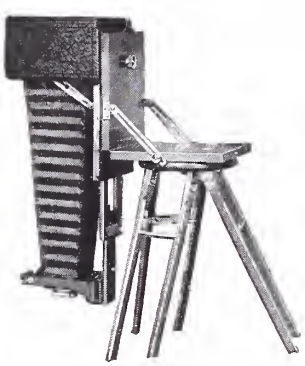
The pleasure one will get from these two outdoor portraits will be in exact proportion to one's skill. To impress on one's mind the lessons they teach, just notice for a time, portraits made out of doors and mark how long it will take, for you to meet the equal of these two pictures in clever handling. If you care to take this trouble you are sure to learn something.

In the next number of this magazine I will treat on the subject of indoor work.

THE TILTING TRIPOD TOP

A most serviceable tripod attachment for which the photographer can find many uses, is the Crown tilting top. With it we can quickly adjust our camera from the horizontal to vertical or any intermediate position.

I wish to draw the reader's attention to its great adaptability in copy-work, or in photographing such objects as are most conveniently taken in a horizontal position.



Those of us who have attempted to copy pictures, printed or written matter, have doubtless experienced the trouble that arises from the grain of the paper, and that is not all, we have often times experienced the difficulty of getting an even illumination over our original; good work is impossible where these conditions exist. Those who are supplied with properly regulated lights avoid these difficulties, but the average amateur has rarely these conveniences. It is evident if we place our original to be copied in a horizontal instead of in a perpendicular position, as it would be if tacked on the wall or to an upright board, we shall greatly facilitate matters. We can work before a window and close up to it, or better still we can work out of doors in the shade, with our copy pinned on a drawing board and supported at a convenient height and our camera pointing downwards, we will then find our illumination perfect.

Again, in flower photography, it sometimes happens if we wish to show a spray of flowers to the best advantage it can only be done by laying the flowers on a horizontal support.

Solid objects may be photographed in this way and will show clearly and distinctly. A great deal of work is accomplished with the camera pointing downwards.—E. F.

OUR WILD FLOWERS

Kindly Contributed by Our Readers

IV. CALIFORNIA PITCHER PLANT
(Darlingtonia Californica)

This strange plant is to be found growing in boggy places or swamps, in scattered localities throughout Northern California and Southern Oregon.

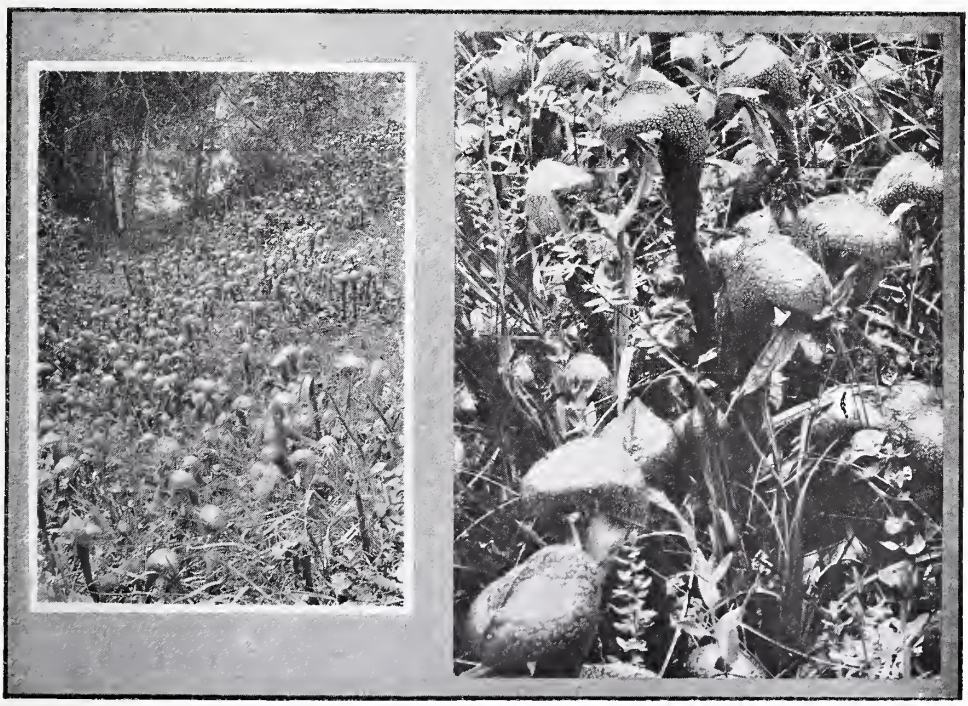
The pitcher plant has long horizontal greenish root stalks and tubular leaves, ending in cobra-shaped heads with prominent wings or sides, these serve as a trap for insects, on which the plant is supposed partly to exist.

The fluid in the tubular stalks seems to have the action of a gastric juice, disintegrating the insects submerged in it.

The flower is single and of an attractive purplish color, growing on a long slim stalk from eighteen inches to two feet tall; it blossoms during the months of June and July.

On hot days, there is a fetid odor in the vicinity of the growing plants which probably attracts insects to their destruction.

The pitcher plant may be found in great profusion along the Feather River Highway, on the line of the Western Pacific Railroad, and autoists from San Francisco may discover something of interest in the study of this peculiar vegetation.—Harry S. Lawton.



Originality: With a Capital "O"

By W. P. M.

For the benefit of those "who take pictures merely for their own amazement."

Foreword: When through the curse of inhuman events, it becomes necessary for us to apply our craft in an effort to satisfy the vanity of those who have least reason to possess it, it is essential that we use the best of our ability to procure results that are original.

Therefore: To those of us, who are tiresome of producing nothing but 100 per cent prints day in, and day out: and who are desirous of attaining the wonderful tones, and original (?) idiosyncrasies relative to the artistic results of the Drug Store Amateur, this shower-bath of knowledge is respectfully dedicated. . . Applause.

Assembly will now come to order, while I demonstrate to them the new possibilities laid open for us through their acceptance of the leadership of one, for whom no book of rules was yet written.

First, we will eliminate ourselves from the horde of dolts, who follow prevailing rules, laid down by Methusalahs in the line of experience; and proclaim to the world our independence. . . Us for Ourselves till the Statute of Liberty shimmies up the Hudson.

The primal step in this direction is the purchase of a camera good enough for our grandfathers, (therefore good enough for us), i. e., style of '70. However, if we wish to conquer our prejudice, we may get along very well with one of the present day make.

Cameras of today are made in but one or two colors. Covering and bellows are usually of red or black: a good example of how much the manufacturers are concerned about the taste of the public. This is no reason for us to be satisfied: if yellow or green or other quiet color is desired a coat of good paint will suffice, and also increase the longevity of instruments of this variety of torture. . . "COVER THE SURFACE AND YOU SAVE ALL."

Perfectly satisfied with our apparatus we will not fill our plate-holders in precedence to our first photographic excursion, under the new order. If by any chance while loading the plate-holder the appearance of dust on the plate is conspicuous because of its absence, a camel's hair brush may be used to massage it: if this is done hurriedly, the film will become electrified and dust gathering will be greatly facilitated.

Every thing arranged, we are now ready for our first picture. We start off, not forgetting our invaluable exposure meter.

The subject selected we carefully replace the meter in our hip-pocket (in case hip-pocket is occupied, any other will do), and take a glance at the

sky and foreground. One-fifth of a second at F:11 is our guess, and we're off again. . . Repeating the procedure half-a-dozen times, we congratulate ourselves on consuming but half an hour's time.

No loss of time there. Now that we are home again, we find that it will be some time until the cellar is vacated by father and his friends, (in this case), so we quickly unload our plate-holders, taking particular care that we do not place the film sides face to face, as this eliminates the possibilities of having the much desired finger marks retained in our prints.

Having at last the monopoly over one section of the dark room secured, we begin the pleasurable part of the afternoon's work. Finding the room rather warm, the surplus stock of gray matter, under our hair, suggests that warm weather and stale developer may cause trouble. We immediately forestall such a catastrophe by the addition of an ounce or two of alum to the developer, to harden the film.

We don't have much time left now, as supper will soon be ready, so we'll try our hand at time development. In an occurrence like this, we may deviate a little from our own principles, and snitch from the wise-acre. They say that with this developer at 60 degrees, twenty minutes is necessary for complete development. By our way of figuring that would allow one minute to each 3 degrees Fahr. . . as we will probably consume more time than that, while consuming our repast, we can raise the temperature of our solution to about 80 degrees and have twenty-six minutes. This will leave a margin of fully six minutes to pick our teeth.

We must admit, Brains are a great asset, many's the time we look around us, and deplore the scarcity of same.

Having fully submerged the plates, we can partake of what is left of the food, while we keep one eye on the cellar door, and the other on our mouth.

The scoffers of Genius are many. Who, among you, have not belittled the great men of the world—Edison, the Steel King, Coal Oil Johnnie, and the famous author of "May I Not?"

Considering the circumstances, we did pretty good. The clean glass was what we wanted for the printing frame, and after a few more trials we can easily compete with others. You're advised to wait down here till the company goes, is all right, but who among the most intelligent can develop films or plates in a solution of acid HYPO. Mistakes do happen.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

FOUNDED MAY, 1900

Vol. XXVIII San Francisco, California, April, 1921 No. 4

A Matter of Identification

In "Camera Craft" of February, issued May 2nd, 1921, we published an old time photograph of men prominent in the photographic field under the caption, "As they looked in 1883." The question of identification was in some cases difficult, also an error crept into the typography.

From left to right, the first man on the upper row is Thomas Moran of New York, the second is Ben Pelgrift, salesman for the Scovill & Adams Co. of New York. The seventh is Mr. Wilson of the firm of Wilson, Hood & Co., of Philadelphia, a brother of Edward L. Wilson, old-time publisher of the Philadelphia Photographer, and the eighth is G. R. Angel of Detroit.

The lower row, also from the left to right: The first is Fred Braughtingham of Heroy & Marriner, the second is C. H. Codman of Boston and not David Tucker, as first reported. The fourth man was W. Irving Adams of Scovill & Adams Co., of New York.

Mr. Smith says he has been informed he was mistaken in regard to the identification of G. L. Savage as being the right hand man in the lower row and that it is Francis Hendricks of Syracuse instead.

For the Beginner

There is a novice joins the ranks of amateur photographers every day and some of them we hope to count among the readers of "Camera Craft."

It is our plan to devote space in that department "The Amateur and His Troubles" to these new recruits; to this end we will begin in the next number of this magazine, the publication of a sort of A, B, C of photography, and by this means we hope to help those readers who desire this elementary knowledge.

Many appear to be quite satisfied to turn their work over for others to finish, this is undoubtedly a time saver, but these photographers fail to get the full enjoyment out of photography, which will ever be a closed book to them. If, on the other hand, we learn to develop a negative and to judge when it is over or under exposed, that experience alone will help us to secure better results.

It was only last week when out to secure a negative in Golden Gate Park a lady approached us with her post card camera and asked such elementary questions as to focusing that we wondered what she could have done with the booklet supplied with the camera, and if she had lost it, why she had not asked for another.

On another occasion a camera was brought to us. Something had gone wrong with the lens. We were informed it used to work beautifully, but now,—not—any—more!

We examined the camera. Everything looked alright and we were in a quandery. On request a photograph was produced showing how the lens was behaving. This solved the mystery at once, and we were almost in doubt whether to laugh or cry.

The owner of this camera had been told to stop down to F:11, set the focus at 25 feet and then shoot. While doing view work this proved satisfactory, but when the portrait stage was reached, no wonder the lens would not behave when set at 25 feet for a portrait at about 6 feet distant.

Now, this amateur had a book of instructions, but she—there it is out! —but she declared she had no time to read it.

We smiled—it was a ghastly smile, we felt it was, and we wished, yes, we wished hard, this amateur had been a man.

Specialization

We have alluded to the subject of specialization before, but it is of so much moment to a certain class of amateur photographers that we feel it should be brought before their notice again.

Among amateurs, there is a class who take their hobby in a more serious light than merely to regard it as play. It is from the ranks of these workers that many, perhaps most of our professionals come, they are eager to learn and "Camera Craft" is just as anxious to help them. This we try to do by securing the assistance of the expert amateur and of the professional also. These men all specialize on some particular branch of photography.

In the present number many readers will be attracted by "Speed Photography." Mr. Reeves, the writer, though an amateur, makes this branch of work his specialty.

Mr. Carlson, on the other hand, has a leaning to mechanics and it was only natural and wise, that he specialize in that direction. To R. W. Carlson might be given the title of "Historian of the American Locomotive." What does the locomotive mean to the United States? Most of us would not be now, just where we are—having a good time—were it not for the locomotive; this near living thing naturally has a history.

We have arranged for articles with three professionals who are particularly good in their special lines, and these articles will be well illustrated, so that the amateur, and we hope the novice also, will find information of value to them.

It is our belief that specialization in any photographic line is a decided incentive to better work, a longer lived hobby and in many, many cases it has proved a stepping stone to some useful end.

We intend to keep "Camera Craft" a photographic magazine of wide appeal and, we aim to interest those also who are not actually photographers, believing many of them will ultimately take up a pastime that leaves no regrets.—E. F.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Warm Tones With Colloid Silver

In "Photographische Rundschau" Dr. Felix Formstecher has a paper on the production of prints in a range of warm colors by suitable (chemical) reduction of a silver chloride image. He recalls the process in which such results are obtained by restrained development of a gelatino-chloride emulsion and prescribes a method based on the conversion of a developed image into chloride and its subsequent exposure to light in presence of reducing agents appropriate to the production of tones ranging from blue to red chalk. The tones thus obtained are much more vivid in color than those resulting from the sulphide process and others dependent on the conversion of the silver image into a different metallic compound. The mixture found most suitable for the conversion of the developed image into chloride is:

Copper chloride	30 gms.
Hydrochloric acid, sp. gr. 1.17	3 c.c.s.
Ammonium persulphate	10 gms.
Water	1,000 c.c.s

This causes the image to disappear completely, other bleachers, such as ferricyanide and mercuric chloride, leaving a faint visible residue. The print is washed for a few minutes, treated in one or other of the following baths, and exposed to light:

For red to yellow color:

Stannous chloride	10 gms.
Hydrochloric acid, sp. gr. 1.17.	1 c.c.
Water	100 c.c.s.

The print should not be washed after exposure to light; the stannous salt may remain in it without ill effect.

For blue color a solution of hydrazine sulphate is used, but prints must be washed after immersion in it, otherwise they turn yellow.

Hydrazine sulphate	10 gms.
Water	500 c.c.s.

Nitrite yields a color intermediate between those produced by the two foregoing baths:

Potass nitrite	10 gms.
Water	500 c.c.s.

Papers coated with unripened chloride emulsion are most susceptible to this process. Gaslight papers, as a rule, are more suitable than bromide, and yield good results, particularly with hydrazine and stannous chloride with some chlorbromo paper the hydrazine is found to yield a remarkably bright color, but the print must not be left too long in the bath, otherwise the tone becomes degraded with black in time. Washing out the hydrazine sulphate scarcely affects the tone; and with some gaslight papers the process yields a violet blue tone scarcely obtainable in any other way. With stannous chloride, on the other hand, the tone is red-chalk, becoming brownish purple. Both tones are fairly permanent.

A necessary precaution in the use of the process is to avoid too strong a light when bleaching and treating in the subsequent bath. The prints should be handled and dried in a darkened room, and not exposed to bright light until dry. If so exposed whilst wet, spotted points with yellowed whites are obtained. The process leads to a certain loss of contrast, though this can be avoided by omitting the persulphite from the bleach, which then leaves a slight residual image. Dr. Formstecher does not anticipate extensive use of the process, owing to the time required for exposure, but puts it forward as the most convenient method for the special purpose of obtaining vivid tones. The process, of course, is not new (cp. Gamble and Woolley, "B. J.," December 26, 1913, p. p. 987-991), but the particular formulae given above have their practical interest.

Photo-Stereo-Synthesis: The Photographic Representation of a Solid Object

[Students of photography have been so accustomed to associate the names of the brothers Lumière with chemical investigations into photographic processes that it is perhaps overlooked that MM. Lumière have long taken an interest in the optical side of photography. Their share in the origination of the cinematograph projector is their most notable contribution to this branch of photography: another piece of original work which has proved less fruitful is the stereo-photo-diorama,devised by them some years ago. In the following paper by M. Louis Lumière, contributed to the Academy of Sciences and recently published in "Comptes Rendus," the theory and practice of a method of producing a single photographic representation of a solid object are described. The result obtained by the method which is here set forth consists of several positive transparencies representing successive planes of the subject, and mounted one behind another at intervals proportional to their separation in the subject and to the scale of reproduction. The set of transparencies, when viewed by a strong transmitted light from a chosen standpoint, produces the sensation of solidity in a striking manner.—Eds. "B. J.."]

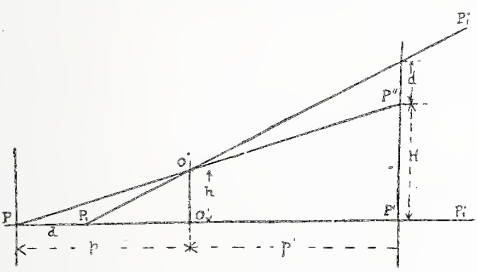


Fig. 1.

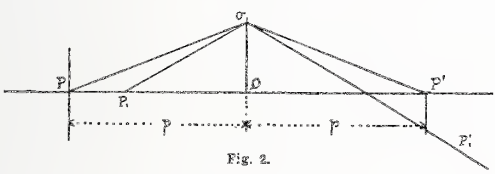


Fig. 2.

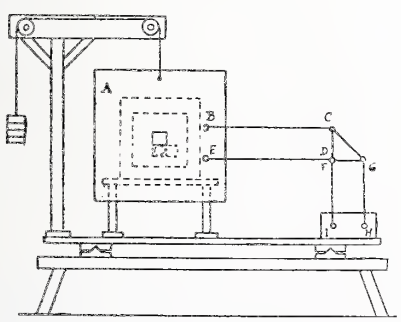


Fig. 3.

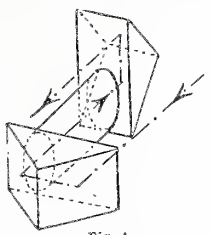


Fig. 4

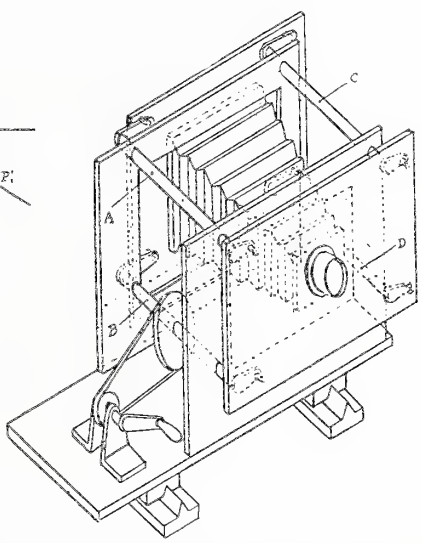


Fig. 5.

If photographic negatives are taken, on a fixed scale of reproduction, of a series of parallel planes (equidistant or otherwise) of an object, whilst fulfilling the condition that each image represents only the intersection of the object by the corresponding plane, it will be possible, by superimposing the positive images made from the negatives obtained in this way, to reform in space the appearance of the object photographed. For this it is sufficient that the distances of positive images are equal to those of the planes photographed modified by a coefficient corresponding with the scale employed

For a theoretically perfect reproduction it would be necessary to superimpose an infinite number of images differing from each other to an infinitesimal degree, but

experiment has shown that this condition, which obviously cannot be fulfilled in practice, is not necessary in order to convey to the eye the impression of continuity: a small number of elements is sufficient if, within certain limits, each image corresponds not with a plane, which likewise cannot be done in practice, but with a given focal volume. This focal volume should, however, be fairly small if it is desired to avoid parallax effects.

If the attempt is made to effect this reproduction by means of a lens possessing the maximum relative aperture which is possible, it is found that the depth of field is still much too great.

In order to obtain the necessary reduction of the focal volume, I have devised two methods, based upon the following considerations:

(1) In fig. 1 let O be a lens of flat field producing an image P′ of a point P situated on the principal axis. If the lens be displaced so that its axis remains parallel to itself to a distance h and so that its principal planes remain in the same position in space, the image P′ will come into the position P″, situated in the image plane conjugate to the object plane which contains the point P.

If, at the same time, the image plane be moved in the same direction and without rotation on itself through a distance H such that

$$\frac{h}{H} = \frac{p}{p + p}$$

the position of the image of the point P will not have changed relatively to the limits of this plane. It can be easily shown that this will be the case also with every point situated in the object plane conjugate to the image plane.

It will, however, not be the case with points such as P, situated nearer to or further from the object plane. At each distance d of this plane there will be a corresponding displacement d'' of the curve of the secondary axis corresponding on the image plane, and the value of d' will be given by the formula—

$$d' = \frac{h\,p'}{p - d} - H - h$$

The image of the point P will thus yield on the sensitive surface a curve of length d'.

It is easy to see that there is an advantage in making the ratio $p : p'$ as small as possible, in making h on the other hand of as high a value as possible and in selecting a very small value for f. But the conditions of reproduction in practice limit the choice of these factors. Unless a sensitive surface of enormous dimensions be employed, there is the necessity of adopting a value of $p : p'$ of less than 1, whilst f cannot be less than about 20 cm.

(2) In fig. 2, O is the lens provided with a reversing prism and forming the image P′ of the point P, p and p' being necessarily equal, having regard to the prolongation arising from the interposition of the prism.

If this lens be subjected to displacement of any amplitude whilst taking the precaution to effect the displacement in the plane of the principal section of the prism, and if this plane, as well as the principal planes of the lens, remains unaltered in position in space, the position P′ of the image of the point P will not undergo alteration. On the other hand, the image of any point nearer to or further from the image plane will undergo displacements in accordance with the formula already set forth. Thus, for reduction of the focal volume, it will be sufficient to provide the lens with two reversing prisms, the principal sections of which are at an angle of 90 degrees, and to displace the axis of the lens parallel to itself whilst likewise keeping the principal sections parallel to themselves during displacement.*

For the application of these theoretical principles I first constructed an apparatus on the lines of (2), which appeared to me most susceptible of a practical form.

A board A (fig. 3), capable of sliding in its own plane on the front of a photographic camera, is caused to move so that its sides remain constantly parallel to themselves by the operation of the linked system B C D E and F G H I. It carries at its center a lens fitted with two Porro

*It follows from this arrangement that it is possible to photograph a surface of any given extent by means of a lens of any focal length, e. g., of very small focal length relatively to the dimensions of the surface.

prisms arranged relatively to each other as shown in fig. 4, the principal section of the front prism being perpendicular to that of the rear prism, and the extension of the camera, which completes the apparatus, being such that the condition $p=p'$ is fulfilled. The whole apparatus is mounted on rails which allow of it being moved towards or away from the object to be photographed for the purpose of placing it in the successive positions corresponding with the series of planes chosen for the making of the negatives.

By moving the lens board during the exposure the definition of points not corresponding with the condition $p = p'$ is affected.

In default of prisms cut in the required manner, the images which I obtained were not altogether satisfactory, and I therefore constructed the apparatus represented in fig. 3, which is on the lines of (1) above.

Two frames, each affording a large opening, are connected by cross bars, not shown in the drawing.

These frames permit of the passage of four spindles A B C D each of which is provided at its extremity with a crank piece. To each of these cranks is fitted a pivot, and the ratio of the lengths of the arms of the front and rear crank is equal to

$$\frac{p}{p + p'}$$

The four front pivots engage in sockets fixed in the lens board and, similarly, the four rear pivots support a second board to which is attached the back body of the camera. The two boards are connected by a bellows which fits light-tight at each end. Lastly, one of the spindles carries a pulley, by means of which, during the exposure, a rotating movement may be given to the whole system by the device shown in the drawing.

From the considerations which have already been set forth, it will be clear that every point beyond the object plane conjugate to the image plane corresponding with the ratio $p : p'$ yields on the sensitive plate a circular curve, the diameter of which is greater in proportion as the point is at a greater distance from the object plane. Moreover, the circle of confusion corresponding with the aperture of the lens adds its effect in diffusing the definition of this point. Only the points situated in the image plane conjugate to the object plane are sharply rendered.

The angular aperture of the lenses which can be used, by taking a high value for h, would permit of limiting the depth of definition to a small volume, but experience shows that it is scarcely possible to exceed, for the circumference described by the lens, a diameter greater than 80 mm., otherwise, on synthesis of the positive images there is produced a species of conical anamorphosis which completely alters the appearance of the result obtained. This effect appears to be due to the fact that for a given definition the focal volume is greater for points situated beyond the object plane than for those on the near side of this plane.

Whether this is so or not, by choosing suitable values for the different factors and by using a lens of large relative aperture, the apparatus permits of the production of practical results.

—Louis Lumière, B. J. of Photography.

THE AMATEUR AND HIS TROUBLES

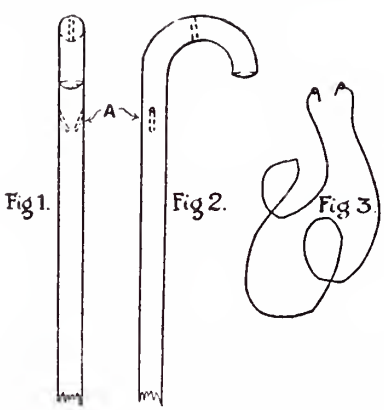
Conducted by Edgar Felloes.

A Tripod Tip

Some years ago a writer in a photographic journal stated that he was able to hold his camera in the hand for periods up to two seconds, and that the exposures so made showed no signs of movement.

In normal circumstances, the carrying of one of the numerous lightweight tripods now on the market is not a matter of moment; but at times even the slightest addition to the weight of one's outfit causes one to hesitate.

Such a case occurred in the writer's experience when he decided some time ago to undertake a 250 miles walking tour. Of necessity, all weight was cut down to the irreducible minimum, and ultimately it was decided that a quarterplate Xit and film pack adapter would be the ideal combination.

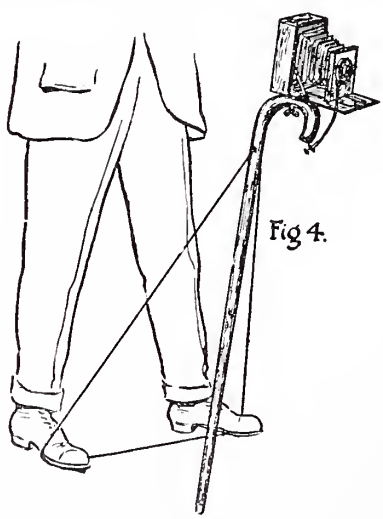


Naturally, a tripod could not be carried, and, from previous experience, it was felt that a walking stick tripod would not help. Mostly, they are heavy, and altogether unsatisfactory. But as a walking stick has to be carried (for what walking tour is complete without one?), why should it not be utilized in some way?

In engineering parlance, "struts" had been proved "out" for this purpose (an ordinary tripod consists of three struts); therefore "ties" had to be considered. This was the inception of an idea, the product of which has stood the writer in good stead for a three weeks' tramp, and has enabled time exposures to be made which otherwise would never have been attempted.

Briefly, all that is required is an ordinary walking stick in which three holes have been drilled, an ordinary tripod screw, a piece of string, and two short lengths of wire.

The stick, which is preferably of ash and provided with a crooked handle, has drilled, one on each side, two small holes of about five-eighths inches in depth and about three-thirty-seconds inches diameter.



These holes are made at an angle as shown at A in figs. 1 and 2; but the exact angle is not of importance, although the more acute the angle, commensurate with strength, to the length of the stick, the greater will be the efficiency of the whole apparatus.

Another hole is drilled in the handle of the stick of such diameter as to allow the ordinary tripod screw to pass freely. When the stick is looked at as in fig. 1, this hole must be cut absolutely parallel with the length of the stick; but when viewed as in fig. 2 the hole must be oblique. The reason for, and amount of, this obliquity will be apparent later. The edges of the three holes should be nicely cleaned off and sandpapered, particularly the one for the screw.

The wire pins, which can be made from wire clips, such as are used for holding papers together, are shaped as shown in fig. 3, and the ends of the string are fastened securely to them.

Fig. 4 shows the apparatus in use, and it will be seen that the wire pins are pressed into the side holes of the stick, and the feet are placed in the loop of string so formed. The camera is then attached by means of the tripod screw to the handle of the stick, which points away from the user, and the position of the end of the stick is adjusted on the ground until the back of the camera assumes the angle required. Usually this is vertical; and, if this is generally desired, the angle at which the tripod screw-hole is drilled will depend upon the angle at which it is found most convenient to hold the stick. In other words, the tripod screw, when in normal use, should be at right angles to the ground. It will be obvious that the lens axis can be readily raised or lowered by changing the angle of the stick.

The length of the string will have an effect upon the rigidity of the arrangement, as, with the legs far apart, a far more rigid structure is obtainable than when they are close together.

There is no need to hold the camera in any way (in fact, it is best to make the exposure without in any way touching the camera itself) by means of the "bulb" or "antinous" release. If, however, a strong wind is blowing, or for other reasons it is necessary to steady or hold the camera, it should be done by means of a strong, steady push away from the body on to the camera back.

In this manner comparatively long time exposures can be made; but it is essential that an inelastic string be used, owing to the difficulty of, otherwise, preventing even slight bodily movements communicating themselves to the camera.

After considerable experience of this arrangement the writer has no hesitancy in most strongly recommending it as a substitute for the tripod where the latter cannot be conveniently used.—H. J. M., in Amateur Photographer.

Blue Prints

It is not at all likely that the blue print will ever die out, it is too useful for that, but those who have used it in a small way, have no doubt experienced that for good results it is essential to have freshly prepared paper.

There is now on the market a blue print powder sold under the name of Cyanine, all that is necessary is to add a little of this powder to plain water and with a sponge, a tuft of cotton or a brush, to coat a sheet of paper with the solution, which, when dry is ready to print. Cards and fabrics may be treated in the same way, and the amateur using a postcard camera will find he can prepare his souvenir postal cards at a minimum of expense.

If we wish, "the blue print may be toned to sepia, brown, black or green, though the untoned print is very attractive in itself for a variety of subjects.

Cyanine may be procured in as small quantities as one ounce bottles, listed at 40 cents, and the manufacturers state it will keep indefinitely in the powder form. Instructions for using accompany each bottle.

Fixing the Negative

Novices are apt to hurry their negatives through the fixing bath, impatience to learn results may be cause. If the negative is returned to the Hypo no ill effects are likely, but if the worker removed the negative as soon as apparently clear, trouble is likely to be in the future.

There is an old rule, a good one; leave the film or plate in the fixing bath as long again as it took to clear it. The reason is, this will dissolve the hyposulphite of silver in the film, which can not be done by the wash water.

OUR BOOK SHELVES

D'Annunzio "Squares"? Himself

It would be interesting to know what Gabriel D'Annunzio had in mind when he sent a bouquet of roses to the great Italian actress, Eleanora Duse, on her return to the stage last Friday, after a retirement of several years. Perhaps he thought this was a sufficient amende honorable for his peculiar portrayal of his affair with Duse, the theme of his novel, IL FUOCO (The Flame of Life), or was his "violation of decent reticence, surpassing even that of Mr. George Moore," just Poetic License?

The Flame of Life is, perhaps, the most popular—at least in America—of Mr. D'Annunzio's romances, although The Triumph of Death and The Child of Pleasure run the former a close race.

The complete list of Mr. D'Annunzio's novels (The Page Company, Boston) is as follows:

The Triumph of Death, The Child of Pleasure, The Intruder, The Maidens of the Rocks, The Flame of Life.

The rest of the writer's works consists of poems and plays of comparatively lesser significance, and, of course, of a great mass of political pamphlets, speeches, and other results of his World War activities.

A Second Edition

Prof. C. J. Killen of the Bissell College of Photo-Engraving, Effingham, Ill., L. H. Bissell, president, has just issued the second edition of his book, "Operating for Photo-Engraving Process."

This little book is packed with information in condensed form. One can find in it just what he wants in a moment. The question of screen separations and stops is neatly arranged to supply immediate information. We can not do better than to quote from the preface:

There are three or four large books published that are complete expositions of photo-engraving, but a beginner in the profession cannot always understand the technical and scientific data that is given. This little book is written especially for the beginner and it gives in plain language the actual practical method of working with enough theory to enable the beginner to understand why things are done as they are. As no one person knows everything, the writer hopes that experienced operators also will find a few points of value to them.

No claim is made for "best" formulae, but every one given is standard and has been in use all over the country for years. If the one you are using gives the desired results, keep on using it. This is not a book of "pet" formulae, but a book of practical facts that if studied and carried into practice, will help any earnest worker.

The price of this book is $1.50 and may be procured from L. H. Bissell, president of The Bissell Colleges, Effingham, Ill.

The Air Brush

This is No. 181 of The Photo Miniature series, published by Tennant & Ward, 103 Park Avenue, New York.

In this book instructions in working with the air brush are very clearly given and the student will derive great help by following directions. The whole work is written in such a way that the enquiring reader should have no difficulty in grasping the essentials, for it is only practice that will make the workman.

There is always a demand for good air brush workers in commercial art and the young man or woman with some natural talent for the pictorial or artistic would do well to look into this subject as in it, he or she may find something to meet their desires.

This book will make interesting reading for any amateur photographer; he will learn how others do things. The price of this book is 40 cents.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

The frontispiece this month — "The Twisted Oak That Guards a Hill," is from a fine print made by W. Zenis Newton. Mr. Newton gives a great deal of serious thought to his work and while on his many rambles has made some excellent tree studies.

The original of this picture, together with some others by Mr. Newton, Otto C. Schulte and many more excellent workers, are in an album that is now being made up for circulation among its contributors.

This album will go through California, Oregon and Washington, and any workers in these states that would like to see it will have their name put on the route list if they will send one or more prints to be included in this collection.

Not larger than 7x11 or 8x10 and this size is preferred, if convenient for you to furnish. Make up two or three prints from negatives that you are proud of and send them to A. E. Davies, 1327 Grove Street, Berkeley, Calif.

Your prints will be carefully mounted and incorporated in this album. When the collection is complete each contributor will receive it in turn.

Notice

Illinois members I. P. A., I am back on the job, so send in your prints, with description for new Illinois State Album. Will the member who sent me prints some time ago please write me with correct address, so as to get album.

Thanks to one and all.

GEO. A. PRICE,
Director Ills. Division.
802 W. Park St., Urbana, Ills.

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

Louis R. Murray, Chief Album Director, 927 Ford St., Ogdensburg, N. Y.

A. E. Davies, General Secretary, 1327 Grove St., Berkeley, Calif.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Lantern Slide Division, 1327 Grove St., Berkeley, Calif.

STATE SECRETARIES

California—A. E. Davies, 1327 Grove St., Berkeley.

Colorado—H. E. High, 1023 Champa St., Denver.

Idaho—Eugene Clifford, 902 9th Ave., Lewiston.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Louisiana—Samuel F. Lawrence, 1247 Oakland Street, Shreveport.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—J. F. Peters, Room 210 Union Station, St. Louis.

New York—Louis R. Murray, 927 Ford Street, Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, care Southern Electric Company of Texas, Wichita Falls.

ALBUM DIRECTORS

Alabama—Richard Hines, Jr., Barton Academy Bldg., Mobile.

Colorado—O. E. Aultman, Plested Bldg., Trinidad.

Connecticut—Harry E. Carpenter, 389 Remington Ave., Bridgeport.

Florida—Capt. E. S. Coutant, Lock Box 73, Stuart.

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Illinois—George A. Price, Box 286, Champaign.

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Massachusetts—John Mardon, 10 High St., Boston.

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Minnesota—Leonard A. Williams, 622 2nd Avenue South, St. Cloud.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—Wharton Schooler, R. F. D. No. 2, Eolia.

New York—Charles F. Rice, P. O. Box 517, Mamaroneck.

NEW MEMBERS

4931—H. J. Hollowell, Box 294, Lancaster, Mo.
Any size to 5x7. Azo, Cyko, of views and animals; for anything of interest. Class 1.

4932—W. G. Fahrion, 429 B St., San Rafael, Cal.
Class 3.

4933—W. F. Perez, Jacksonville, Fla.
2¼x3¼ and 3¼x4¼. Developing, of snappy girl pictures and studies in the nude; for same. Class 1.

4944—Charles Douglas, R. F. D. 1, Jerseyville, Ill.
3½x4½ and 22¼x3¼. Developing, of general subjects; for buildings, sceneries, landscapes and anything of interest. Class 1.

4945—H. Carleton Stewart, 296 McClellan St., Schenectady, N. Y.
Class 2.

4946—Edward H. Schild, M. D., 338 Cleveland Ave., S. W., Canton, Ohio.
Class 2.

4947—H. G. Fenton, Aptdo. No. 6, Parral, Chih., Mexico.
Class 2.

4948—Victor K. Szinyey, 65 Beach St., Bridgeport, Conn.
3¼x5½ and 5x7. Azo and Velox, of various subjects; for anything of interest.

4949—Ernest Orville Kean, Box 55, St. Thomas, Virgin Islands, U. S. A.
3x5¼ Argo, Velox of miscellaneous; for the same. Class 1.

4950—J. M. Scarborough, Attoyac, Nacogdoches Co., Texas.
Class 3.

4951—Wm. J. Clark, Box 514, DeWitt, Iowa.
Class 2.

4952—Walter W. Blackwell, Utah Mine, via Scofield, Utah.
3¼x4¼, 5x7, 8x10 of snow scenes, mountain landscape, farm animals and clouds; for the same. Class 1.

4953—Louis Kunc, P. O. Box 63, Hemlock, Ohio.
3¼x4¼ and 3¼x5½ of scenery and farm views; for anything of interest, but no portraits. Class 1.

4954—Victor Scheen, Kootenai Lodge, Big Fork, Mont.
3¼x5½ of landscapes, mountain scenery, farm scenes, winter scenes, domestic animals, etc.; for the same. Class 1.

4955—Foster Sheller, Box 36, Gatun, Panama Canal Zone.
2½x4¼ Azo glossy F grade of ships, locks, streets in Colon and general subjects; for anything of interest. I desire to exchange only photographs. Class 1.

4956—C. F. Dorsch, 77 Elmwood Place, Bridgeport, Conn.
Up to 5x7 on paper or postals of views, bathers and nudes; for the same. Class 1.

4957—N. D. Panter, The Bawn, Foxrock, Co., Dublin, Ireland.
3¼x4¼ bromide and platinum papers of photos, Dublin street scenes and Swiss winter sports; for genre, landscape and street scenes of other countries.

4958—Belle Trump, 230 N. Weller St., Ottumwa, Iowa.
Class 2.

RENEWALS

276—I. N. Morrill, 2509 Rierce St., N. E., Minneapolis, Minn.

2618—Geo. H. Webb, Columbiana, Ohio.
Class 2.

3820—W. S. Cotton, 5021 Thirty-third Ave., S. E., Portland, Ore.
Unmounted stereo prints; for the same. Class 1.

3852—J. W. Jeffers, McClure Bldg., Rooms 610-11, Frankfort, Ky.
From vest pocket size to 5x7 and enlargements of landscapes, genre, a few nudes of children only, also soft focus work; for anything in artistic lines. Class 1.

4163—C. A. Heald, 127 Dexter St., Covina, Cal.
Class 2.

4314—W. E. Bowman, Dayton, Wyo.
3¼x5½ up to 6½x8½ of cattle round-up and branding views, mountain and stream scenery and draped and undraped figure studies; for anything good. Class 1.

4472—Harry E. Carpenter, 389 Remington Ave., Bridgeport, Conn.

4628—B. F. Willard, 339 Claymont St., Wilmington, Del.

4591—B. W. Moulton, Quincy, Ill.

4723—Leonard A. Williams, 622 Second Ave. So., St. Cloud, Minn.
2¼x3¼ to 5x7 of pictorial landscapes, figures and portrait studies; for the same. Class 1.

4777—Souhei Nakano, 969 Handa-cho, Aichi-ken, Japan.
Class 3.

CHANGE OF ADDRESS

4419—Rev. C. Lilie, R. 1, Van Meter, Iowa.
(Was Persia, Iowa.)

4581—Geo. W. Greene, 115 East Gorham St., Madison, Wis.
(Was 315 N. Murray St., Madison, Wis.)

4622—A. G. Cronacher, 1263 Elizabeth St., Kenosha, Wis.
(Was 1115 Yale St., Sacramento, Cal.)

4864—Walter H. Wilson, Milan, Ind.
(Was Sunman, Ind.)

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of Interest

Item

The Misses Moore and Clarke, who have for several years successfully conducted a high class photographic studio in the Liebes Building, 177 Post Street, have disposed of their business to R. P. Whigham, photographer.

Miss Moore has started on a trip to England to meet old time friends and relations and Miss Clarke has decided to get married. These two ladies have the good wishes of a host of friends and "Camera Craft" is among these well wishers.

R. P. Whigham, the successor, is well known in San Francisco's professional photographic circles, and now numbers this last acquisition as the third studio he controls in this city.

Photographic Exhibition

We would remind our readers of the Frederick & Nelson photographic exhibition from November 1st to 12th, inclusive, of this year, at Seattle, Washington.

November, at present, seems a long way off, but do not procrastinate, write now for rules and entry forms.

California has some pretty good photographers—modesty dictates the expression "pretty good;" we do not mean exactly that, but of California photographers we would ask, why should we not win—the—first—prize?

Modern Stereoscopy

Almer Coe & Company, Chicago, have recently published their new booklet, "Modern Stereoscopic Photography."

This work was undertaken in the interests of those who have taken up this branch of photography, and also to stimulate interest in the small sized stereo cameras.

We have read this little book with considerable pleasure, it is written for the purpose of giving information and it really gives it. The amateur seeking information, or one who is at all interested in this line of work should write to Almer Coe & Co. for this little publication.

The modern stereoscopic camera is something greatly in advance of the old type of instrument. It is portable and always ready. The pictures in one type of camera are about one and three-fourths inches square, but it must be remembered when viewed in the stereoscope they are magnified and one forgets the actual size of the picture on account of this extreme realism.

The reader should be reminded of one fact, that one of these little pictures are capable of giving really excellent enlargements, we have seen an 8x10 enlargement made from a negative of this sort which left nothing to be desired, it was surprisingly good. And again, in the matter of focus the small lenses required for this class of camera shows a remarkable depth of focus, everything sharp from about ten feet, and by the use of supplementary lenses it is possible for special purposes to bring the object to within six inches of the lens, in proof of this, the publishers show two stereoscopic pictures of the works in a watch photographed in natural size, and these pictures when viewed stereoscopically show wonderful definition.

The publishers say, and we have not the slightest reason to doubt them, the following: "In addition to its fascination for amateurs there are commercial possibilities in this form of photography as it is a practical way to show pictures of articles in their true form as a sales help, instead of sending or taking the real articles to the prospective customer."

The booklet also gives various developing formulas and hints for making these stereo pictures, and if you are interested in the subject you should write Almer Coe & Co., 105 N. Wabash Ave., Chicago, Ill., one of their four stores.

A Press Photographer

Frank B. Howe, who operates a news photo bureau with Los Angeles as headquarters, has added the Newspaper Enterprise Association to his list of patrons.

The editorial offices of the N. E. A. are at 340 Sansome street, San Francisco.

Readers of Camera Craft will remember, Mr. Howe was a frequent contributor to its pages, but his increasing activities in his chosen profession have greatly monopolized his time. We have however obtained a promise from Mr. Howe for an account of his photographic work among Uncle Sam's big guns, this should prove interesting, but his experience would strike some as unpleasant, though Mr. Howe declares he enjoyed it.

Lensology and Shutterisms

A booklet, published bi-monthly for and in the interest of Wollensak dealers by the Promotion of Trade Department.

Under the title "Odds and Ends" Wollensak has the following:

All normal photographers have eleven toes, counting their Verito.

Thirty days' trial has always been offered on our lenses. While this privilege has been occasionally abused, we ourselves favor it because it gives the customer an opportunity to become better acquainted with the lens on trial. But we want your advice. In preparing our new catalog, should we specify 30 or 10 days free trial, or omit any definite mention of a time limit?

"What kind of a lens do you use to make glossy prints?" queried a regular photographer, quite seriously, at a recent convention.

Shades of Daguerre! We wonder if he also thinks that "The harder you squeeze the bulb, the faster the shutter works."

Convertibility in a lens is a desirable quality. Did you know that our Series I Velostigmat, Verito, Versar and Vesta all have at least one element that may be used alone?

Three sizes of bulb attachments are supplied for Studio Shutters. Small size fits No. 1 Studio. Medium size fits Nos. 2 and 3 Studio. Large size fits Nos. 4 and 5 Studio.

Photolithographer Wanted

The United States Civil Service Commission announces an open competitive examination for photolithographer on June 22, 1921, at any of the places listed hereon at which examination is requested in applications received in time to mail examination questions. A vacancy in the Bureau of Engraving and Printing, and vacancies in positions requiring similar qualifications, at $5.76 to $6.60 per diem, or higher or lower rates of pay, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Bonus—Appointees whose services are satisfactory may be allowed the increase granted by Congress of $20 a month.

Citizenship and Sex—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles. For this position in the Bureau of Engraving and Printing men are desired.

Duties—For the present vacancy the Department desires a man who is skilled in the art of making zinc and aluminum process plates from photographic films and glass negatives for offset printing.

Applications—Applicants should at once apply for Form 304, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board. Applications should be properly executed, including the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

Two Notable Novels for April

The Page Company (Boston) have in train for publication in April two notable novels—"The Princess Naida," a romantic and fast-moving tale of today, by Brewer Corcoran; and "A Flower of Monterey," a romance of the Californians, by a new writer, Katherine B. Hamill.

Motion Photography

Those of our readers interested in this subject, and any who contemplate taking up this branch of photography, will find several pages of interesting information incorporated in Burke & James' catalogue devoted to this subject.

This book is intended to make you familiar with the "Universal Camera;" it is a description of the methods and the machine. The work is well illustrated and among the pictures are photographs of Martin Johnson, the world famous cinematographer of primitive races, operating his Universal in the South Sea Islands. And there is also a picture of Mrs. Martin Johnson making pictures of a group of cannibals, on the Island of Malekula. This camera was knocked about in the bottom of a whale boat for weeks at a time, carried through dense brush and is still making perfect film.

It takes a perfectly made camera to stand this hard usage and the trying tropical climate, but the Universal stood all these tests and delivered the goods. Perhaps our readers have seen in the movies, these natives of the South Sea Islands, black as the "ace of spades," but the Universal registered all—the wrinkles and the ugliness.

If you are interested in motion picture photography for any purpose, you should write Burke & James, Inc., 240-258 East Ontario Street, Chicago, and they will be pleased to send you a copy of Motion Photography.

Soft Focusing

It is interesting to note the steady growth in popularity of soft focus lenses. There are many of these types on the market and experimentors have turned their attention at times to various appliances to secure the soft focus effect, with any make of lens. If this can be successfully accomplished so that the worker may secure satisfactory results therefrom, there is little doubt a demand for such a lens modification would result.

The Artograph Screen Company, 500 Fifth Avenue, New York, have worked out just such a device for which they have secured a patent.

The Company puts forward this claim: "Works wonders in making a diffused negative superior to any soft focus lens on the market, guaranteed, or money refunded." Photographers who are interested should write the Artograph Screen Company for particulars of their lens attachment.

In Business Fifty-three Years

Fifty-three years is quite a little while and the Hyatt's Supply Company of St. Louis, Missouri, can boast of having been in the business of manufacturer and distributors of photographic apparatus and supplies for 53 years.

This firm has issued a new professional catalogue which is an encyclopedia of all photographic apparatus and studio outfits. It should be in the hands of every professional photographer.

Remember the house of Hyatt is headquarters for everything photographic.

"Every Click a Picture"

A new booklet has just been issued by Burke & James, Inc., the manufacturers of the famous Rexo Line of cameras, films, paper and photo products.

Readers of Camera Craft are doubtless familiar with this fact, but here is a bit of news new to them. In this booklet are several pages of practical information for the amateur and some others and this information is so well illustrated with pictorial diagrams that the reader cannot help but learn something of real value which is certain to be of direct benefit in future work.

The reader should, if interested, write Burke & James, Inc., 240-258 East Ontario Street, Chicago, Ill., for a copy of "Every Click a Picture," which will be sent to them

A New "Little Cousin of Long Ago"

The Page Company announces the publication of "Our Little Crusader Cousin of Long Ago," by Evaleen Stein, the twelfth volume in that famous educational series for young people—"The Little Cousins of Long Ago" Series, which is uniform in format and appearance with the established Little Cousin Series. In "Our Little Crusader Cousin of Long Ago," Miss Stein tells, with that fanciful charm of which she is mistress, the story of two gallant boys who went to Jerusalem on the Third Crusade, which was lead, you will remember, by Richard the Lion Hearted of England and Philip Augustus of France.

Canadian National Exhibition, Toronto

This will be the thirtieth annual exhibition of the Toronto Camera Club.

A cordial invitation is extended to pictorial photographers throughout the world to submit prints. The Canadian National Exhibition has the largest daily attendance of any annual exhibition in the British Empire, so that the pictorial photographer will have exceptional opportunity here for the display of his art.

For entry forms, etc., address J. R. Lawson, Secretary Exhibition Committee, Toronto Camera Club, 2 Gould Street, Toronto, Canada.

Exhibits should reach the club rooms not later than July 30th, 1921.

The Portland Society of Art

Portland, Maine, at the Sweat Memorial Art Museum on Tuesday, May third, was held the opening private view of the annual exhibition of this Society.

This exhibition consists of oil paintings, pastels water colors and miniatures. This event is looked forward to by an ever growing number of Portland's citizens and it is a matter of civic pride, that the visitors to these annual exhibitions are not confined to a certain favored class, but are representative of the people.

"Par-Excellence" Tank Company

The amateur finishing trade has now grown to such enormous proportions that caterers for that line of business are realizing the importance of adding to or changing their equipment to meet demands.

Developing and printing for amateurs and for the trade generally has not only quality for its desideratum, but the element of time plays a vital part in the success of one's undertaking.

Time is money; an old adage, it is true, but today, the truthfulness of it is more apparent than ever. To save that time, which is tantamount to saying, to save that money, the equipment must be perfect—par excellence in fact.

It is odd and a good omen, that that there is on the market the "Par-Excellence" Tank. It is easy to remember the name, for that kind of outfit—par excellence—is exactly the quality you must find in the whole line of apparatus you need; it stands for success, which is nothing more than extra profit legitimately gained by providing against lost effort.

The "Par-Excellence" Tank Co., makers of the "Petco" film developing system, with offices at 1059 Teutonia Avenue, Milwaukee, Wis., can give you some interesting particulars with regard to tanks which may greatly benefit your business. It is a duty you owe yourself to become familiar with all that is up-to-date concerning your profession and if interested, as you doubtless would naturally be, you should write them for all information you need.

Cleveland Club Moves

We have been notified that the Cleveland Photographic Society has moved from 1100 Huron Road, to better and more spacious quarters located at "The Towers," 6106½ Euclid Avenue, Wickliffe, Ohio.

This progressive Club has now a modern dark room, projection and printing facilities, as well as a fully equipped studio for the use of members.

There has been arranged, an educational program covering all branches of photographic work.

Photos Wanted!

We wish to draw attention to an advertisement in this isue which we think will be of interest to most of our readers. It is the ad of Lothers & Young, Pictorial News Service. They are in the market for good prints or negatives of live news events, also photographs which tell a feature story; for instance, a woman who holds public office, or one holding a big executive position, or a man who has an odd way of making his living, etc. Photos of new inventions and unusual features in general.

If there is a groceryman in your locality who has his delivery wagon made like an airplane or a steamboat, or you know of a man living in a tree, or a small boy who has made an automobile or other invention all by himself, it would be well for you to make a photograph of it and send it to Lothers & Young, 251 Post Street, San Francisco, Cal.

To the Amateurs

Do not forget, the Emporium Photo-Contest closes July 25, 1921. Write for rules and entry forms now. Send in your best work.

CAMERA WANTS

Advertisements of the nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted once free. No regular business advertisements accepted. These advertisements MUST BE PREPAID.

GOING EAST And must sell at once my 5x7 Improved Model Seneca view equipped with 7½-inch Rapid Rectigraphic convertible in Gundlach shutter, 9-inch Port-Land soft focus, f-4.5, in barrel and Low Shutter, complete enlarging attachment, five plate holders, six reducing kits, cut film adapters, tripod, focusing cloth and large canvas carrying case. All new condition and would list over $150.00. For quick sale $65.00. Also other equipment. Address A. H. D., care "Camera Craft," San Francisco, Cal.

FOR SALE 13½-inch Vitax, f-3.8, with Studio Shutter, brass mount, a perfect lens; a bargain for $60.00 or will trade for a 12-inch Wollensak Series II Velostigmat, f-4.5. Address M. A. King, 63 Cleveland, Melrose, Mass.

BRAND NEW From factory, 5x7 Improved Seneca View, Wollensak, f-8, three focus lens, Autic shutter, case and holder. Cost $60.00, sell $50.00. Fred C. Gorham, Swan Creek, Mich.

BARGAIN 8x10 Improved Seneca View, 8x10 Wollensak Verastigmat lens, f-6.3, Auto shutter, fine condition, one new holder included, $45.00. Fred C. Gorham, Swan Creek, Mich.

FOR SALE Folmer & Schwing Graflex, 5x7, fitted with B. & L. Ic Tessar f-4.5. Also especially fitted Wollensak f-4 Verito 7-inch diffused focus, sole leather case. Cost $250.00, will take $135.00. Address A. L., care Camera Craft, San Francisco, Cal.

RETOUCHING Wanted, long experience. Address Mrs. M. Souder, 407 Moraga St., San Francisco, Cal.

FOR SALE A rare bargain. One 8x10 Scientific Portrait lens and new number 5 Packard shutter; new bulb and tubing fitted to 9x9 lens board and camera and stand; new lens cap; one 8x10 adjustable plate holder; 2 dozen new stock Hammer Dry Plates. Lens can not be surpassed for snappy and brilliant bust portraits and is fine also for groups, f-4 speed. First check for $50.00 takes outfit complete. Here is a bargain if you ever got one. Wiswall's, 1300 Willow St., Trinidad, Colo.

N & G TWO SHUTTER REFLEX The world's best reflex camera, 4x5, Protar lens and all accessories, $435.00. Stereo Graflex with f-4.5 Tessars, holders, adapter, roll-holder, case; all new and latest model. List, $409.00, sell $300.00. R. B. Auto Graflex, 4x5, 2 magazines, roll holder, adapter, case. List $221.00, sell $165.00. Verascope with f-4.5 Tessars, $200.00. Nettle 6x9½ cm., focal plane shutter and Tessar f-4.5, adapter and holders, $110.00. Adams Roll Film Vesta 2¼x3¼, Ross Xpres lens, $165.00. Goerz Manufoc Tenax 4x5, holders, adapter, case. Most compact camera made, $100.00. Icarette 2¼x3¼, f-4.5 Tessar Compur shutter, $65.00. Nettle V. P. Piccolette Tessar, f-4.5 in Compound, $65.00. Goerz V. P. Roll Film, Dagor in Compound, $65.00 Baby Sibyl Ross, f-4.5 Xpres, $150.00. Ica Ideal 10x15 cm., with convertible lens, adapter for 3¼x5½, case, $35.00. 3A Special Kodak with 6 plate holders and extra plate back, (no range finder), case, $65.00. No. 1 Panoram Kodak, $7.50. No. 4 Panoram Kodak, $15.00. No. 2 Stereo Kodak, $20.00. B. & J. 5x7 Enlarger, $50.00. Carl Zeiss Tessar, f-4.5, 10-in., $135.00. 7-inch, same, $55.00. 6-inch, same in Compound, $60.00. Cooke-Telar, 13½-in., $35.00. 16-in., same, $45.00. Goerz Dagor, Berlin, 6½-in., in Compound, $45.00. Tele-Peconar, f-5, a pocket telephoto lens for pocket cameras, $25.00. Nearly every item is new. No trades. A. I. Root, Box 215, Estes Park, Colorado.

FOR SALE Brand new Halldorson Flash Cabinet, retouching desk and chemical scale. New Halldorson outfit retails at $45. Make me an offer. Address C. R. Petersen, 3556 Wrightwood Ave., Chicago, Ill.

WANTED Stereo camera, 10x15 cm., with 3 lenses in Triple Compound shutter. Alpine preferred. A. I. Root, Box 215, Estes Park, Colo.

WILL SELL One copy Pictorial Composition in Photography (Hammond), brand new; or exchange for "The Human Figure" (Vanderpoel). Carl W. Beese, Fenwick, Ont., Canada.

RETOUCHING Wanted. All work promptly and neatly done. Out of town studios given special attention. E. G. Jasman, 611 E. Main St., Stockton, Cal.

POSITION WANTED By experienced Kodak finisher and commercial photographer. Address W. A. Rosser, Shannon, Ala.

WANTED Cirkut outfit without lens, No. 8, 10 or 6½-inch. Must be in good condition. Give full description. J. C. G., care Camera Craft, San Francisco, Cal.

WANTED Press or 5x7 Auto Graflex without lens, in good condition and right price. Post Office Pharmacy, Jerome, Arizona.

FOR SALE No. 1 Autographic Kodak Special, (2¼x3¼), with Cooke Kodak Anastigmat f-6.3 lens and Optimo shutter (up to 1/300 sec), $45.00. F. E. Davis, 1929 Pine Ave., Altoona, Pa.

STUDIO FOR SALE Monthly receipts eleven hundred dollars, rent light, water fifty dollars. No coupons or cut rates. Price, thirty-five hundred dollars Cash. Might consider exchange A No. 1 clear real estate, choice small farm or residence, or well located and established studio doing about (not over) six thousand dollars business annually with reasonable expenses. Address J. F. O., care Camera Craft, San Francisco, Cal.

FOR SALE 2½x3½ Linhof Precision camera, all metal, Carl Zeiss Ic f-4.5 in Compur shutter, rigid, double extension, case, 12 holders, film pack adapter. A rare camera at a bargain, new, $85.00. J. Kallaus, 508 Jackson St., Milwaukee, Wis.

FOR SALE Popular Pressman Reflex, 3¼x4¼ Aldis air spaced f-4.5, reversible back, ground glass, speeds 1/15 and 1/1000 sec., leather carrying case, 6 plate holders, like new. Value of camera $142.00; sell outfit for $100.00. A. O. Rinder, 517 Eartharn Drive, Whittier, Cal.

FOR SALE Wilton Photo Supply Company will put you wise to a business established for years; close to San Francisco, Cal.; practically your own price, as the place is to be sold; fine location, low rent, large territory to draw trade from. One of the best valleys in the State; a sure pickup for some one wanting a photo biz. Apply to The Wilton Photo Supply Company, 717 Market St., San Francisco, Cal.

WANTED Anastigmat lens and shutter, 3¼x4¼ up to 5x7, also Graflex 3¼x4¼ or 4x5, with or without lens. W. C. Bennett, Orenco, Oregon.

ANSCO SPEEDEX Selling at $55.00, late model V.P. No. 3, B. & L. 90mm. Ic Tessar in Ilex Acme, excellent condition, leather belt case. Joseph Dixon, Museum of Vertebrate Zoology, Berkeley, Cal.

FOR SALE A good studio in a county seat town of 1400. No competition. Large territory to draw from, getting good prices. Fully equipped and new. This is an old established studio, good opportunity for any one. Address Sullivan's Studio, Pocahontas, Iowa.

CAMERA WANTS—Continued

POSITION WANTED First-class operator and manager having graduated from reliable art school before going into photography, desires immediate employment as operator or salesman or will manage portrait studio or Kodak finishing establishment. Have considerable experience and can furnish A-1 reference. Also have nearly a full studio equipment and may consider partner either experienced or inexperienced. Prefer something within 200 miles of Minneapolis. Address A. M. Brown, Frederic, Wis.

WANTED To Buy second-hand Darlot lens. Must be a bargain. Give full particulars and lowest price in first letter. Address Northern Photo Supply Co., Minneapolis, Minn.

POSITION WANTED Married man with six years' experience wants position in studio or finishing plant. State salary. Address "J. T.," care Camera Craft, San Francisco, Cal.

POSITION WANTED By allround photographer of many years' experience; fully caapble of taking charge of studio and increasing business. Or would accept operator-retoucher position. San Francisco or close to prefcrred. Address Box 22, care Camera Craft, San Francisco, Cal.

FOR SALE Premo No. 6, 5x7 R. R. lens, two compartment leather case, tripod, focusing cloth, 2 plate holders, color filter, copying lens, portrait attachment, duplicator, wide angle lens in barrel. $35.00 net. Chas. Wale, 103 East Kentucky Street, Louisville, Ky.

FOR SALE Ross Telecentric, f-4.5, 12-in., $60.00. Walsoe, 750 E 47th St., Chicago, Ill.

FOR SALE One 5x7 view camera made in Japan, 3 plate holders, tripod and case. Entire outfit weighs 11 pounds including tripod which is very substantially made, $37.00. Address J. V. C., care Camera Craft, San Francisco, Cal.

POSITION WANTED As manager retail Kodak shop or finishing plant. Experienc ten years at buying and managing same, also cutlery experience. A1 reference. A live wire. Address A. C. Mahler, 3100 Neosho, St. Louis, Mo.

POSITION WANTED As retoucher and colorist. Address Box 589, La Grande, Oregon.

SALE OR EXCHANGE 3¼x5½ Speed Graphic; want 3¼x4¼ Speed Graphic. C. E. Pring, 145 West 15th St., Los Angeles, Cal.

WANTED Complete Voigtlander Stereo Alpine 10x 15 c.m. Box 11 Care "Camera Craft" San Francisco, California.

WANTED 5x7 or 6½x8½ Louis Gandolfi Ross Improved Portable square bellows or Sanderson type camera. State price and condition. Box 44 Care "Camera Craft", San Francisco, Calif.

A-1 All-around photographer wishes the management of a first-class Kodak finishing plant or a high-class portrait studio, or will accept position in either one. 12 years' experience. Best of references. Married. Salary, $40.00 per week. Address L. D. K. care Camera Craft, San Francisco, Cal.

FOR SALE Universal Motion Picture camera, tripod and two extra magazines, 5x7 Graflex, 8x10 Century Studio with 16½-inch Voigtlander Heliar lens. C. E. Pring, 145 W. 15th St., Los Angeles, Cal.

FOR SALE Plastigmat lense, 14-inch focus, Bausch & Lomb, $75.00. Gabriel Moulin, 153 Kearny St., San Francisco, Cal.

FOR SALE One of the best known one-man studios in the far west. Equipped with the finest of lenses, grounds, Pa-Ko dryer, etc. All the new lightings from all angles with two powerful nitro globes, Hollywood spot light and a 15000 candle power light, combined with daylight. Prices for 8x10 portraits per dozen from $40.00 to $125.00, larger sizes in like porportion. Established 1913. Net profit for 1920 $8400.00. Catering especially to the wealthy clientele. Will take an excellent photographer to handle the business. Price $5,000.00. Address F. W., care Camera Craft, San Francisco, Cal.

RETOUCHING Correctly handled by an expert. Color specialist in portraiture and landscape. Emerson Beers, Room 363, Pacific Bldg., 821 Market St., San Francisco, Calif.

BOOKS Photographic books and magazines of all kinds bought and sold. Back issues of many magazines on hand. List sent for stamp. Please state needs, as supply on hand is continually changing, Harry A. Brodine, 777 Forest Ave., Bronx, New York.

ROLL HOLDER Wanted. Eastman-Walker 6½x8½ size, must be in good condition. State price. Address C. S. B., care Camera Craft, San Francisco, Cal.

FOR SALE 3A Compact Graflex Carl Zeiss 18 c.m. Ic, f-4.5 Tessar lens and adapter for $150.00. Also Tourist Multiple camera, f-3.5 lens, B. & L. Tessar and projector, cost $250.00, like new, $150.00 takes it. J. J. Dlouhy, 1925 S. May St., Chicago, Ill.

FOR SALE OR LEASE—Studio doing good business in Oakland. For further information call or write Van Dyke Studio, 1225 Broadway, Oakland, Cal.

FOR SALE Studio in one of the richest and fastest growing cities of Central California. Good business and good lease. A1 equipment. Takes $3,000.00 to handle it. Please do not write unless you have the cash and mean business. Answer B. C. P., care Camera Craft, San Francisco, Cal.

WANTED All round commercial photographer and dark room man. One who can operate circuit camera, do Kodak finishing, etc. Must be an experienced man and be able to leave immediately if wired for. State wages expected and full experience in first letter. Will guarantee two years' work. Address W. E. Logemann, Anchorage, Alaska.

WANTED Simplex Multi-Exposure camera with f-3.5 Zeiss Tessar and Compound shutter. State condition and best price in first letter. W. B. Reed, R. F. D., 20 Box 105, East Akron, Ohio.

FOR SALE Ansco Vest Pocket No. 3 camera, Ansco anastigmat, f-4.5 lens. Good condition. Will take $30.00. F. W. Ambos, McCoy, Colo.

WANTED All round help in a small town up in the mountains. Good fishing and hunting. Will consider selling one-half interest to reliable party. Address P. O. Box 173, Alturas, Cal.

WANTED Good portrait camera for the road, 5x7 preferred, complete panoramic 3½x12 say, practical enlarger. P. O. Box 175, Alturas, Cal.

WANTED 8x10 view camera. For sale or exchange 4x5 Seneca outfit, pair 4½-in. mounted condensers, 4x5 Graflex magazine, six 5x7 Graflex holders. M. Schwartz, 452 New Jersey Ave., Brooklyn, N. Y.

SALE OR EXCHANGE 5x7 Premo No. 7 (same as Premo No. 10), fitted with 8¼-in. Sylvar f-6.8 Anastigmat lens in Acme shutter, 12 plateholders, leather carrying case; all in perfect condition. Want 6½x8½ Revolving Back Cycle Graphic. F. H. Maybury, 623 Poydras Street, New Orleans, La.

FOR SALE No. 2 Halldorson flash lamp (2 guns), $20.00; set 9-inch mounted condensers, $20.00; No. 6 Series II Collinear lens in Auto shutter, with extra barrel, $85.00; No. 5 Century studio outfit, no lens, $20.00; upholstered studio grouping bench, $20.00; New Improved Seneca, 8x10 view camera with detachable enlarging 9-inch condenser back, $40.00. Address H. F. L., care "Camera Craft, San Francisco, Cal.

FOR SALE 6½x8½ Century View No. 1, fitted with R. R. lens in Auto shutter, 6 plateholders, tripod, carrying case, in perfect working order. Best cash offer. F. H. Maybury, 623 Poydras Street, New Orleans, La.

FOR SALE 8x10 Competitor View, fitted with 12-in. Series IV Velostigmat, f-6.3 lens in Autex shutter, 3 plateholders, carrying case, new condition. Best cash offer. F. H. Maybury, 623 Poydras Street, New Orleans, La.

CAMERA WANTS—Continued

WANTED To buy 5x7 Velostigmat, Ser. III, wide angle, f-9.5 lens in Auto shutter. F. E. Davis, 1929 Pine Ave., Altoona, Pa.

WANTED 11½-in. focus Verito lens in barrel; 3½-inch Thornton Pickard shutter, model B; also Ica Ideal camera, Model A with Carl Zeiss Ic f-4.5 lens (might consider same model B). All must be in first class condition. Price reasonable. Edw. H. Weir, Box 366, Dunsmuir, Cal.

FOR SALE Well equipped studio, county seat, 2,500 population, wide drawing territory, wealthy orchard district. Two portrait, two view cameras complete; E projection printer, two dark-rooms, all conveniences; owner sick. Price $1,800; $500 will handle, easy terms. E. R. Van Cleve, Dallas, Oregon.

WILL BUY Studio or Kodak shop, western state. Will sell 10-inch Goerzlitz lens, f-5.6, $40.00; 6-inch Goerz, f-6.8 in Koilos shutter, $25.00. H. P., Route Box 272A, Ocampo, Cal.

FOR SALE 3A Ica Kodak, Hekla f-6.8 lens, equiv. new inc. S. L. case, $35.00 C. O. D. H. C. Newhaus, 1345 Rosedale Ave., Chicago, Ill.

FOR EXCHANGE Premo Reflex, size 4 x 5, 7-inch Ross Hemocentric f-6.3 lens, for a Graphic Long focus R. B. camera, size 5x7. T. S. Chapman, 65 Clinton Place, East Rutherford, N. J.

FOR SALE R. B. Graflex Jr., with film pack adapter, no lens. It looks and is brand new, $65.00. 5½-inch B. & L. Ic Zeiss Tessar, f-4.5 in barrel, excellent condition, $30.00. Also 6½x8½ Empire State view camera, R. R. lens in shutter with speeds 1, ½, 1/5, 1/25, 1/50, 1/100, T., B., has rising front, swinging back, reversible back, 4 plate holders, and carrying case, in good condition, $17.50. Kodak Enlarging Outfit, $15.00, like new. I want a 3¼x4¼ R. B. Telescope Graflex without lens. Must be cheap and in good condition. H. J. Hite, 620 Fourth Ave., Terre Haute, Ind.

FOR SALE Ansco V. P. No. 2, f-6.3 lens, extra speed Bionic shutter, like new, cost $33.75 with leather case, $20.00 takes it. C. A. Conner, P. O. Box 302, Titusville, Pa.

SALE OR EXCHANGE 3¼x4¼ Revolving Back Auto Graflex, long bellows type, (no lens), with focusing screen, Graflex Roll Holder, Magazine Plateholder and Film Pack Adapter, equal to new. Want 5x7 complete Graflex without lens. F. H. Maybury, 623 Poydras Street, New Orleans, La.

WANTED To buy, rent or locate studio in western town, equipped or unequipped. Address O. H. Hartley, 1800 Nicollete Ave., Minneapolis, Minn.

FOR SALE Two studios, outfit, seven rooms, one darkroom, two living rooms, B. & L. lenses, Century Camera. Studios located at Minnesota Lake and Mapleton, Minnesota. City water, electric lights. One studio rents for $8.00 a month —the other $10.00 a month. Address Geo. Kain, Minnesota Lake, Minn.

FOR SALE Studio established 30 years, doing a fine business. Is not a run down business. Is strictly a man and wife studio with all business you can handle. Will pay for itself in a short time. Strictly high-grade trade with very litle demand for postcard work. Possession given 60 days after purchase. Iowa town of around 1200, drawing trade for miles. Address T. G., care Camera Craft, San Francisco, Cal.

FOR SALE A first class Kodak and commercial shop. Fully equipped, handling Eastman line. In a live Minnesota town with population of 17,000, doing a business of over $1,000.00 a month. Will sell at reasonable price. Reason for same will be explained in letters. Good opportunity for a prosperous young man. Correspondence address J. P. S, care Camera Craft, San Francisco, Cal.

FOR SALE Photographic studio in town of 1000 in Central Iowa, fitted to 8x10. Single slant light. No competition. Cheap rent. Long lease. Snap for $300.00. City water and light. Address I, care Camera Craft, San Francisco, Cal.

FOR SALE Best located studio in Minneapolis, in heart of shopping district, fully equipped and doing good business. Will sell at a bargain as I wish to retire. Address G. R. D., care Camera Craft, San Francisco, Cal.

WANTED TO RENT Photo studio in good live town of not less than 3,000 people. In Minnesota, Iowa or Wisconsin. Address H. F. Nixon, Lankin, N. D. Walsh County.

WANTED Young man who is good operator and retoucher, steady position, good salary. Address Nelson Studio, 187 E. 7th St., St. Paul, Minn.

WANTED An all-around workman. Must be A-1 retoucher. Send photo of self. Also state salary in first letter. Address C. C. Gray, Watertown, S. D.

CASH BARGAINS

3¼x4¼ Voigtlander Camera, Carl Zeiss 4.5 holders, adapt., as new	$65.00
1A Speed Kodak Anastigmat, 6.3, very fine shape	42.50
Premo No. 12, Zeiss K. 6.3, Compound, adapt. and hold., as new	37.50
Auto Graflex Jr., B. & L. 6.3, case, as new	49.50
3A Ansco Speedex, 6.3, as new	37.50
Conley View, 6½x8½ DeLuxe, hold., case, no lens, new	17.50
5x7 Korona No. 5, T. R. trip. Conv. 6.8, case, holders, as new	59.50
5x7 B. & L. Protar W. A., Ser. IV in barrel, as new	17.50
5x7 B. & L. Protar W. A., Ser. V, in barrel, as new	18.50
Either in Volute shutter	27.50
Carl Zeiss, Series I, Protar 18 cm. in barrel, new	27.50
4A Speed Kodak Zeiss, K 6.3, case, as new	49.50
8x10 No. 3 Wollensak Vitax, f-3.8, 16-in. focus, as new	90.00
10x12 B. & L. W. A. Protar, Series IV, in barrel, as new	29.50
5x7 Conley (Velostigmat) wide ang., anast. f-9.5, in shutter, as new	12.50

What do you need? We send privilege examination upon receipt of small deposit, money back if not satisfied.

NATIONAL CAMERA EXCHANGE

20-22 Washington Av. So. Minneapolis, Minn.

Spot Cash and highest prices for your camera or lens. Write brief description of what you have. We will make you a cash offer by return mail. If you wish, you may send your goods, subject to our offer, and if our offer is not satisfactory, we will prepay charges on your goods in returning them to you. Bass Camera Co., 109 N. Dearborn St., Chicago, Ill.

We will pay you the highest price for your camera or lens. Furnish us with the best description you possibly can and you will receive our trade or cash offer. If you prefer, you can send in your goods subject to our inspection and then, if our offer is unsatisfactory, we will return your goods charges prepaid. Central Camera Co., 124 So. Wabash Ave., Chicago, Ill.

G. E. BIDDELL & CO. CAMERA DOCTORS 53 FOURTH ST., NEAR MARKET SAN FRANCISCO, CALIFORNIA

Actual Size

Here is Efficiency

A Focusing Model
of the

Vest Pocket Kodak *Special*

with Kodak
Anastigmat Lens *f*.6.9

In this new camera the focusing is accomplished by slightly turning the lens flange, the focusing *scale* appearing on the shutter itself.

So effective is this manner of focusing that the lens may be brought to perfect focus for subjects as close as three feet, thus doing away with all necessity for the use of a Portrait Attachment in making "close ups".

The shutter is the Kodak Ball Bearing with speeds of 1/25 and 1/50 of a second, the usual time and "bulb" exposures, and of course the full range of stops from *f*.6.9 down to *f*.32.

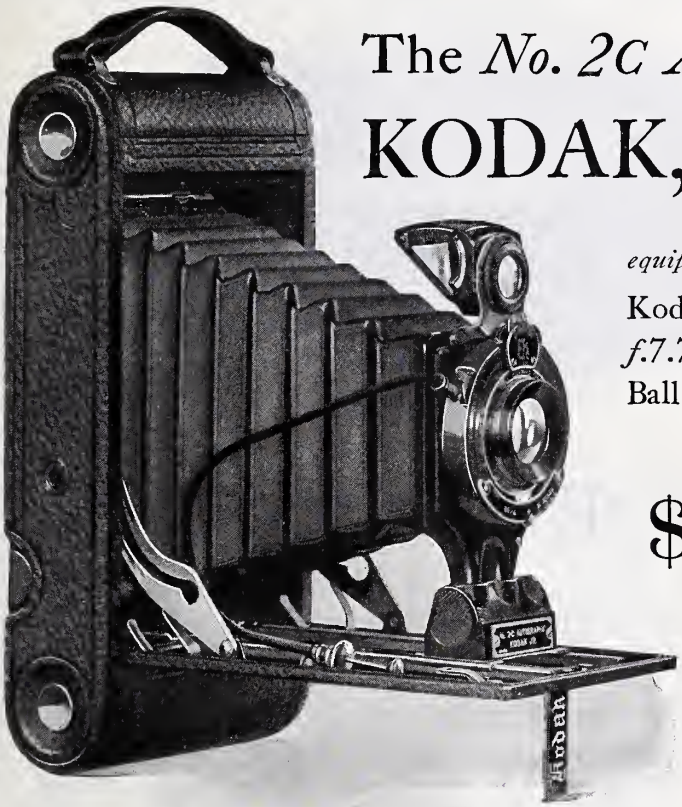
A remarkably compact camera—likewise an unusually efficient camera—autographic, and richly finished.

The Price, $21.00

includes the Excise War Tax.

At your dealer's.

EASTMAN KODAK COMPANY, ROCHESTER, N. Y., *The Kodak City*



The *No. 2C Autographic* KODAK, Junior

equipped with

Kodak Anastigmat *f.*7.7 lens and Kodak Ball Bearing shutter

$25.00

This Camera fits into a niche, all its own. The size of the picture it makes, 2⅞ x 4⅞ inches, is particularly pleasing; is almost up to the full post card size—and yet the camera itself is small, light, convenient.

The Kodak Anastigmat lenses are made to exactly fit Kodak requirements. They are not merely an adaptation of a lens to the Kodak. They are a Kodak product designed to fit Kodaks, and in each case designed with particular reference to the size and type of Kodak and Kodak shutter that they are to be used with. The *f.*7.7 lens used on the *2C* Kodak has more speed than the best of the rectilinear lenses and is at least equal to the best anastigmats in depth, sharpness and flatness of field.

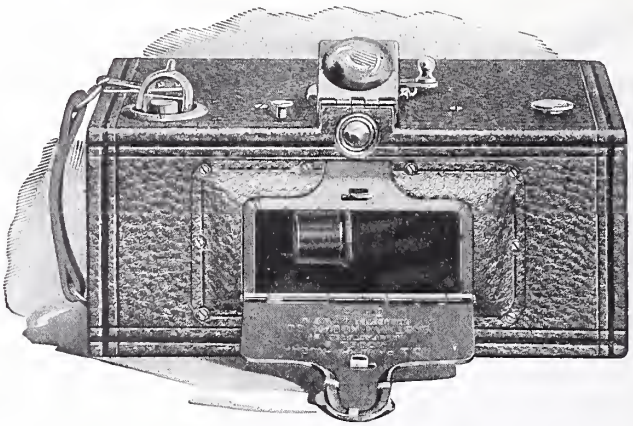
The Kodak Ball Bearing shutter has speeds of $\frac{1}{25}$, $\frac{1}{50}$ and $\frac{1}{100}$ of a second for "snapshots", has the usual time and "bulb" actions for prolonged exposures. It is an unusually reliable shutter, works smoothly and is quiet in its action.

The No. 2C Junior is covered with genuine grain leather, is finely finished in every detail, is extremely simple in operation, is "autographic", of course and, with the Kodak Anastigmat lens, produces negatives having that crispness and sharpness that are characteristic of the true anastigmat.

The price, $25.00, includes the excise war tax.

All Dealers'

EASTMAN KODAK COMPANY, ROCHESTER, N Y., *The Kodak City*



PANORAM KODAK

An entirely different type of camera that gives you an entirely different kind of picture.

Throw the lever, press the button and the lens swings through a wide arc—the whole scene from the extreme left to the extreme right is photographed in a single exposure.

The resulting picture is distinctive—long and narrow as to shape—inclusive as to picture.

Landscapes and large groups are two obvious subjects for the Panoram Kodak—but they only start the list.

The No. 1 makes pictures 2¼ x 7 inches; the No. 4, 3½ x 12 inches. The lens of the No. 1 swings through an arc of 112 degrees; the No. 4, 142 degrees.

PRICE

No. 1 Panoram Kodak	$20.00
No. 4 Panoram Kodak	30.00

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

You can make pictures of you

Attached to the cable release, the Kodak Self Timer trips the shutter after you have taken your position in front of the lens. Plenty of time to pose for your own picture—three seconds or three minutes as you like—within this range the interval is under your control—plenty of time to rejoin the group.

THE PRICE

Kodak Self Timer, $1.25

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Brings your camera in sharp focus at close range—relatively small objects may thus be made to dominate the print. And then, of course, there is the opportunity for head and shoulder portraits.

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Made of metal, the construction is such that the support given the camera is dependably rigid. An easy tripod to set up or take down, a convenient tripod to carry.

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CONTEST CLOSES AUG. 1ST

The terms of this competition are the same as those for the competition announced last month, except that this time the pictures must have been made prior to **May 15, 1921**

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it makes
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of a
satisfying
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Actual size of print 2¼ x 3¼

Easy to Carry *Instantly Ready*

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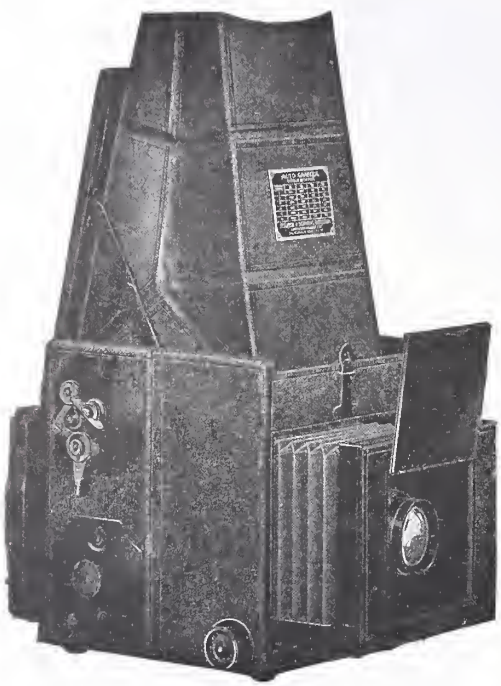

THE AUTO GRAFLEX

The Auto Graflex offers the simplest and quickest method of obtaining quality pictures.

The release of a catch brings the hood into focusing position and a slight movement of a button uncovers and advances the lens, placing the subject before you on the ground glass, right side up and full picture size.

Composition and focus—degree of sharpness are under full control to the instant of exposure.

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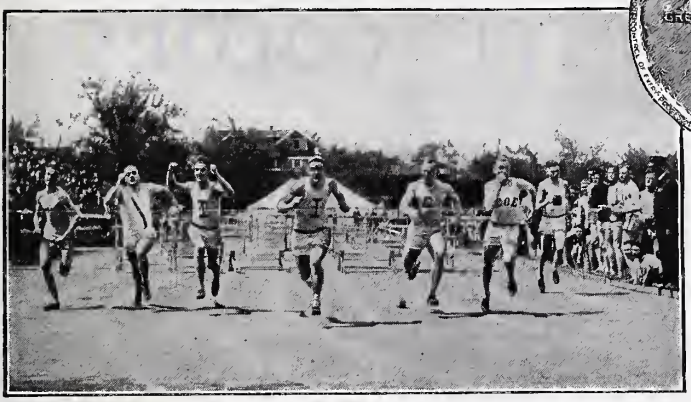
Made in three models: 3¼ x 4¼; 4 x 5; 5 x 7.

64 page Graflex catalogue free at your dealer's or by mail.

Eastman Kodak Company

Folmer & Schwing Department ROCHESTER, N. Y.



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The **Tessar Ic, F:4.5**, more than three times as fast as an ordinary lens, arrests the swiftest motion. This remarkable speed makes possible results otherwise unobtainable, while the superior corrections of the lens insure clear, sharp pictures into the very corners. For speed work with a reflecting camera, therefore, the Tessar Ic is unsurpassed.

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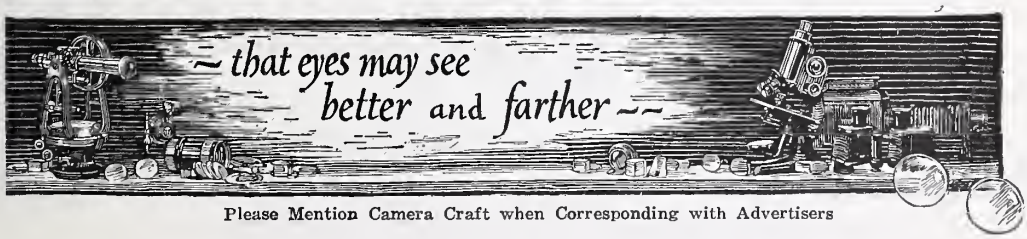

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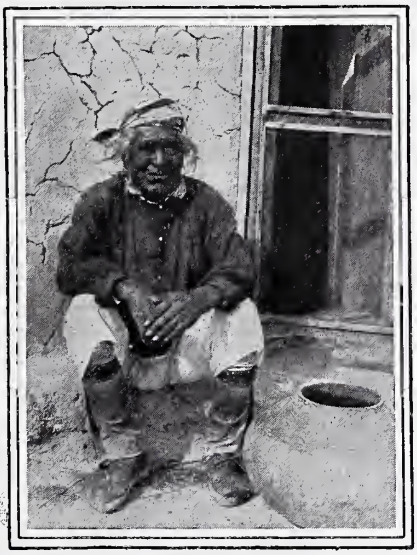

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These Standard Colors are thoroughly transparent surprisingly brilliant in tone, quickly applied and easily removed for alterations. They combine permanency with the best and most satisfactory results.

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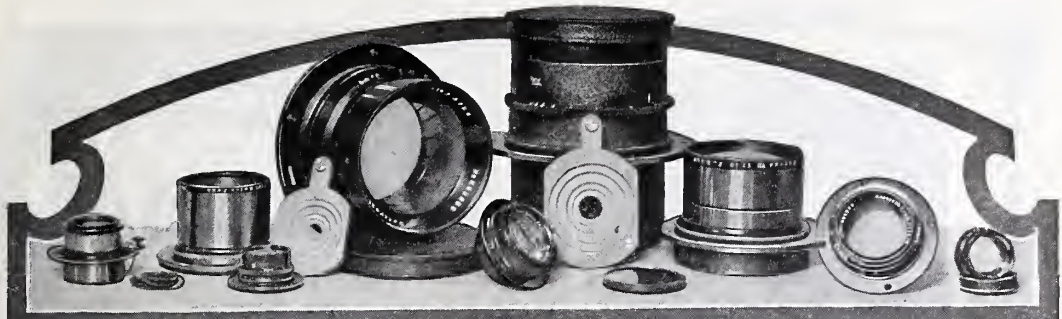

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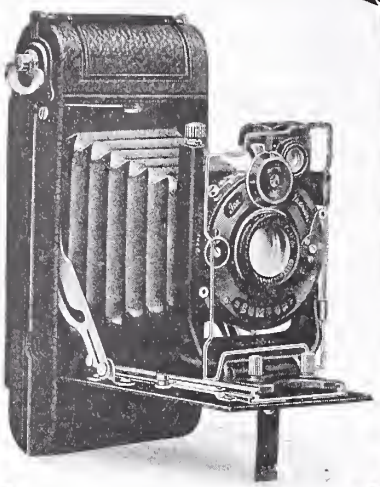

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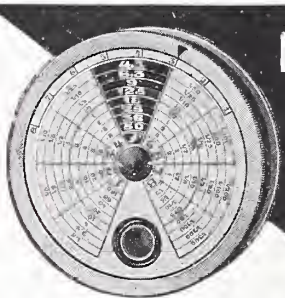

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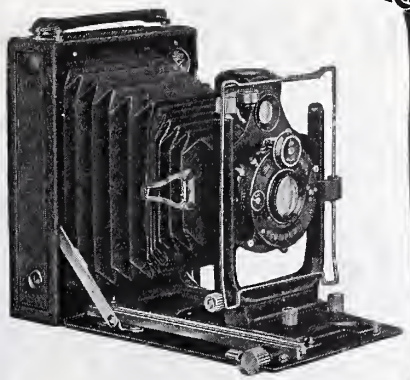

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For plates or film packs 3¼ × 4¼ in. or 9 × 12 cm

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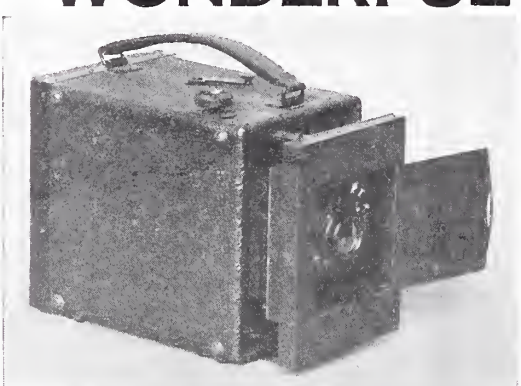

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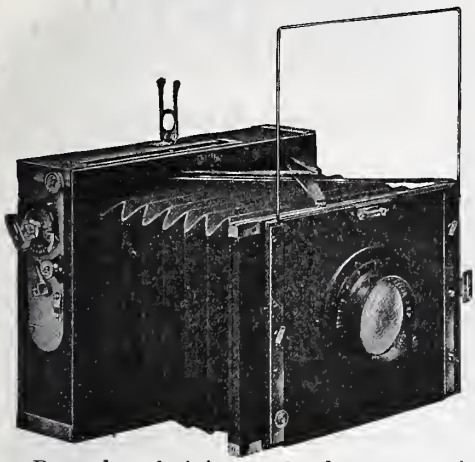

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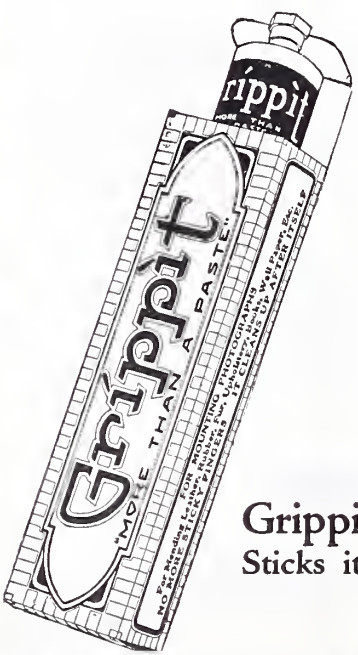

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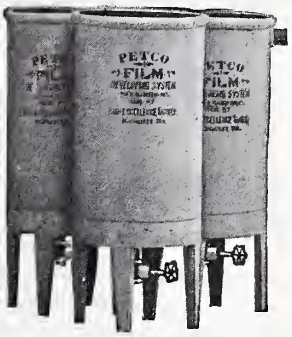

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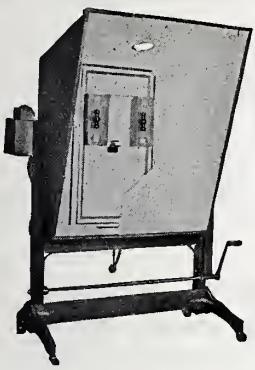

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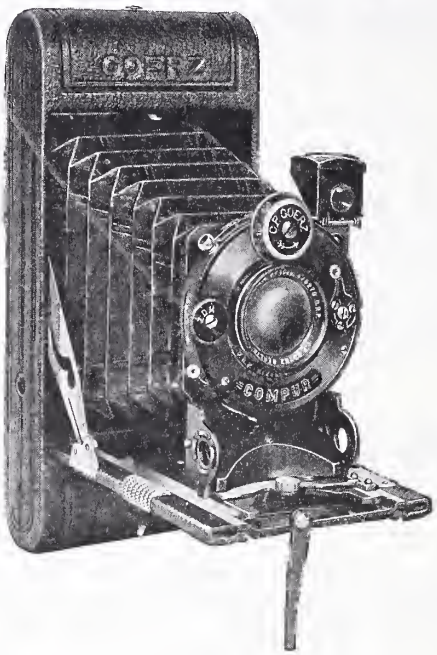

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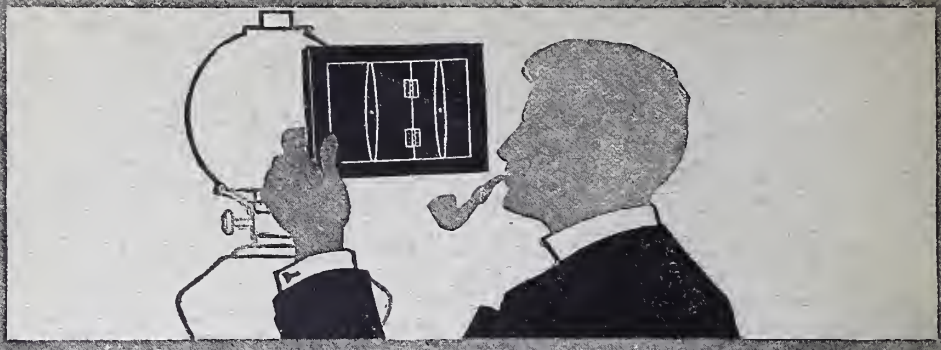

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